

Generative Relations and Music

Pre-Symbolic Manifestation and the Co-Evolution of Being

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Conventions of this book. The main text is written in English. Technical terms belonging to a particular tradition are given in romanised form, italicised at first appearance, with a gloss and the original orthography supplied once; the romanised form is used thereafter. Chinese terms follow Hanyu Pinyin and Japanese terms follow modified Hepburn, except where a different romanisation is established in the scholarly literature, in which case the established form is retained and the alternative is noted. A glossary appears in the back matter.

Three further conventions govern the historical chapters. Every historical statement is marked, in its formulation, as attested in a period source, as reconstructed by scholars from surviving material, or as inferred from present-day practice. Where a practice is described from documentation, the date of that documentation is given, since recent documentation supplies evidence about the period in which it was made. Where a question is contested among scholars, the competing positions are presented with their proponents named, and the question is left open.

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Part I

The Question and the Language

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Chapter 1

The Question of the Book and the Terms in Which It Is Posed

This chapter opens the book. Its role is to state the question the book addresses, to fix the terms in which that question is posed, and to declare the positions the book declines. It undertakes to establish four things: that the question concerns the relation between musical organisation and the relational world in which it arises, taken in four movements; that the formulation with which such inquiries commonly begin requires a correction, since difference among parts is generated through relation and is not presupposed by it; that the corrected formulation redirects the inquiry toward the conditions under which differentiation is sustained; and that three positions available in the literature are declined here with reasons. It proceeds in five sections.

1.1 The Question the Book Addresses

This section states the question. Its objective is to give the question in the form the book will answer, and to identify the four movements into which the answer divides. It proceeds by giving the question, distinguishing its movements, and indicating where each is treated.

The question is how music arises from relations, how it participates in existence, in being and in the formation of subjects, and how the relational systems of a society develop alongside it.

The question so stated divides into four movements, and the division organises the book. The first movement concerns emergence: the conditions under which a musical organisation arises within a relational field, treated in Parts III and IV. The second concerns existence and being: the modes of temporality and of presence that musical organisation institutes, treated in Part V. The third concerns the formation of subjects: the manner in which participation in a musical field bears upon what a participant becomes, treated in Part VI. The fourth concerns propagation: the passage of a relational configuration from musical practice into other systems of a society, treated in Part VII. Part VIII supplies the formal apparatus.

The four movements are stated here in the order of exposition. The order of dependence runs otherwise: the fourth movement rests upon the first three, and the third rests upon the first two.

1.2 Coordination, Composition, and the Case of the Symphony

This section introduces the case from which the book's central problem was originally drawn. Its objective is to characterise that case and to state the problem it appears to pose. It proceeds by describing the configuration, stating the apparent problem, and identifying what requires examination in the statement.

A symphonic performance assembles a large number of participants, each executing material differing from that of the others, in a single temporal field extending over a long span. The participants remain distinguishable throughout: a listener attends to one line and then to another, and the lines retain their identity across the span.

The configuration appears to pose a problem which may be stated as follows: how a large number of heterogeneous participants may be brought into a single coherent process while remaining differentiated within it. The problem so stated has a general form, and the generality is what makes the case interesting beyond music: any system in which differentiated parties are brought into a common process confronts it.

The statement contains a presupposition requiring examination, and Section 1.3 examines it.

1.3 The Correction to the Statement of the Problem

This section corrects the formulation of Section 2. Its objective is to establish that the heterogeneity the formulation presupposes is generated within the process it is invoked to explain, and to state the reformulation that follows. It proceeds by identifying the presupposition, stating the correction, and giving the reformulated problem.

The formulation presupposes that the heterogeneity of the participants is antecedent to their coordination: parts differing from one another are supposed given, and the problem is supposed to be their combination.

The presupposition fails. A musical line is a line by virtue of its position within an unfolding organisation. What distinguishes it from another line is the set of relations in which it stands to that other: its entries, its departures, its answering and its withholding. Before the organisation is under way there are no lines to be combined. The same holds of the participants: a player's part is a part by virtue of what it does with respect to the rest.

Claim 1.3.1. (Generation of difference through relation). *The differentiation of parts within a musical organisation is produced by the relations obtaining among them, so that the heterogeneity a coordination problem presupposes is generated within the process the problem is invoked to explain.*

The correction has a consequence which is easily overlooked and which governs the book. It dissolves the problem as originally stated. Where difference is generated by relation, coherence in the presence of difference is what relation ordinarily does, and its occurrence requires no special explanation.

What requires explanation is the failure. A relational process may generate distinctions and subsequently consume them, so that parties formerly differentiated become interchangeable, and the process continues with its differentiation lost. The reformulated problem is accordingly the following: under what conditions does a relational process sustain the distinctions it generates.

Claim 1.3.2. (Reformulation of the problem). *The problem the book addresses concerns the conditions under which a relational process sustains the differentiation it generates, and the failure of such sustaining is the phenomenon requiring explanation.*

The reformulation makes the symphonic case a limiting instance and withholds from it the status of a paradigm. It is one configuration in which differentiation is sustained across many parties and a long span; Chapter 3 states the general terms, and Part III examines configurations of quite different scale in which the same question arises.

1.4 The Order of the Argument

This section states the order in which the book proceeds. Its objective is to identify what each Part contributes and on what it depends. It proceeds by treating the Parts in sequence.

Part I fixes the framework: the genealogy of the position, the taxonomy of relations, the central hypothesis with its criterion, and the methodological commitments.

Part II treats the internal organisation of musical material, supplying the vocabulary in which sounding organisations are described throughout.

Part III examines ritual traditions, for the evidentiary reason stated in Chapter 11, and reports the results and the failures of that examination.

Part IV examines the historical trajectories of Western and East Asian musical practice, applying the criterion of Chapter 4 to material of a different evidentiary character.

Parts V, VI and VII take the second, third and fourth movements of the question in turn. Part VIII supplies the formal apparatus, placed last because its objects are supplied by the preceding Parts.

1.5 Positions Declined

This section states three positions the book declines. Its objective is to declare them at the outset, since each is available in the literature and each would be read into the argument if left undeclared. It proceeds by treating them in turn.

The first, referred to hereafter as the mirror thesis, is that musical form reflects social relation. On this position a musical organisation is a representation of a social order, and its features may be read as representations of that order's features. The position is declined on the ground stated in Chapter 4: representation and embedding are distinct relations, and the evidence bearing on the second does not support the first.

The second is that relational processes are to be commended. On this position, a practice that generates relations is thereby of value, and a system that sustains generation is thereby justified. The position is declined because it is false: a relation may consume the parties it relates. Two flowering plants set in one bed may produce, through what each releases into the soil, the conditions under which both fail. The relation is real, it is generative in the sense that it produces effects neither party would produce alone, and its product is the loss of both. Nothing in the framework of this book licenses the inference from the presence of relational generation to the value of what is generated.

The third is that music causes the development of a society's other systems. The fourth movement of the question, treated in Part VII, concerns the passage of relational configurations between musical practice and other domains, and Part VII states the weaker claim it supports and the evidence that would be required for a stronger one.

1.6 Summary of Results

This chapter has established the following. The book addresses the emergence of music from relations, its participation in existence, being and the formation of subjects, and the development of a society's relational systems alongside it, in four movements distributed across Parts III to VII. The differentiation of parts within a musical organisation is produced by the relations obtaining among them, so that the heterogeneity presupposed by a coordination problem is generated within the process the problem is invoked to explain. The problem is accordingly reformulated: the book asks under what conditions a relational process sustains the differentiation it generates, and treats the failure of such sustaining as the phenomenon requiring explanation. Three positions are declined at the outset: that musical form reflects social relation, that relational generation is of value in itself, and that music causes the development of a society's other systems.

Chapter 2

Antecedents of the Position and the Gap the Integration Addresses

This chapter states the antecedents of the position developed in this book. Its role is to identify what has already been established in the literatures on which the book draws, so that its own contribution may be located precisely. It undertakes to establish two things: that four established literatures have each treated music relationally, with results this book inherits; and that the gap the book addresses lies in the connections among them and lies within none of them singly. It proceeds in five sections, four treating a literature and the fifth stating the gap.

A remark on the standing of this chapter is required at its head. The territory is occupied. Music is among the most heavily studied of cultural practices, and the proposition that it is relational in character has been advanced, in various forms, for a considerable time. The contribution claimed here is accordingly one of integration, and Section 2.5 states what such a contribution must supply to be worth making.

2.1 Relational Analysis Within Music Theory

This section reports the treatment of musical relation within music theory. Its objective is to establish that the analysis of music as a system of relations is the settled position of a technical discipline, and to identify what that discipline leaves untreated.

Music theory has analysed relations among musical objects throughout its history: intervals relate pitches, harmonic functions relate chords, contrapuntal rules govern the relation of simultaneous lines, and hierarchical analyses relate surface events to underlying structures.

A stronger position was established in the later twentieth century. Transformational theory replaced the analysis of musical objects with the analysis of the operations carrying one object to another, treating the question of what carries a configuration to a subsequent one as prior to the question of what the configurations are. The approach was developed with the apparatus of group theory, and subsequent work extended it with the apparatus of category theory.

The position of this book with respect to that literature must be stated exactly, and the statement is a concession. The proposition that musical structure is properly analysed as a system of relations and transformations is not advanced here as a proposal. It is the standing

position of transformational theory.

Claim 2.1.1. (Prior establishment of the relational analysis of musical structure). *The analysis of musical structure as a system of relations and of the transformations among them is established within music theory, and this book inherits it.*

What that literature leaves untreated is twofold and supplies the opening this book uses. Its transformations relate musical objects to musical objects, and it offers no account of the relation between a musical relation and a relation obtaining outside the music. And its systems are given: the group within which transformations operate is fixed by the analysis, and the historical mutation of the system itself lies outside the account.

2.2 Music Situated Within Social Practice

This section reports the treatment of music as social practice. Its objective is to identify the established positions and what this book inherits from them.

One antecedent stands closer to the present position than any other and is stated first. A phenomenological account of the middle of the twentieth century argued that making music together is the paradigm case of social relationship: performers share a mutual tuning-in relationship in which each lives through the other's stream of inner time, and music is meaningful without being conceptual, so that it exposes a ground of sociality prior to language.¹

Claim 2.2.1. (Priority of the phenomenological account of ensemble). *The claims that ensemble performance is constituted by a mutual relation among parties living through a common temporal course, and that music is the paradigm case of such a relation, were advanced in 1951, and this book inherits them.*

The concession is entered at the head of this section because it is the largest the book makes. What Part VI adds to that account is the documented variation of Part III and Part IV: Schutz described the relation and did not ask how the arrangements sustaining it differ across traditions, or what follows where the parties are not co-present.

A body of work in ethnomusicology, in the anthropology of music and in the sociology of music has established that musical practice is to be studied as human activity situated within a form of life. Positions established within it and inherited here include the following: that music is properly treated as an activity in which participants engage in various capacities, and that performance establishes and explores relations among participants; that conception, behaviour and sound stand in a relation of mutual determination; that the sonic organisation of a practice and the social organisation of the community maintaining it stand in demonstrable relation in particular cases; and that fields of musical participation differ in kind, with the distinction between participatory and presentational organisation carrying consequences for

¹ Alfred Schutz, "Making Music Together: A Study in Social Relationship," *Social Research* 18, no. 1 (1951): 76–97, reprinted in *Collected Papers II: Studies in Social Theory*, ed. Arvid Brodersen (The Hague: Martinus Nijhoff, 1964); see also Schutz, "Fragments on the Phenomenology of Music," written 1944.

what counts as success within each.

A further programme has argued for a relational musicology reconfiguring the boundaries among the discipline's subfields and extending comparison across the social, the technological, the temporal and the ontological.

The literature also supplies a cautionary case which this book treats at length in Part III. A large-scale project of the mid-twentieth century coded features of vocal style across a world-wide sample and claimed systematic correspondence with features of social organisation, arguing that social structure was inferable from musical style. The methodological criticism directed at it concerned sampling, the reliability of coding, circularity in the assignment of categories, and the treatment of whole societies as bearers of single styles. The project and its criticism together define the hazard that any comparative claim of the present kind must avoid.

2.3 Perception, Body and the Ecological Account

This section reports the treatment of musical perception. Its objective is to identify the established positions bearing on the listener's relation to sound.

A body of work has treated musical perception as the perception of an environment and has set aside the decoding of a message, applying an ecological account of perception directly to music and analysing what a sounding environment affords a listener. Adjacent programmes treat cognition as enacted through bodily engagement and as distributed across persons and instruments.

This book inherits from that literature the treatment of the listener as a participant within a sounding field, and Part VI develops the consequence.

2.4 Psychoanalytic Treatment of the Voice and the Subject

This section reports a literature bearing on the third movement of the question. Its objective is to identify what it establishes and to state where this book enters.

A psychoanalytic tradition has treated the constitution of the subject as requiring a position exterior to it, from which the subject is addressed and thereby constituted, and has treated the voice as one of the objects around which that structure is organised. Applications to opera and to the singing voice have been developed at length.

This book enters that territory in Part VI, and the position taken there is stated in advance. Two amendments are proposed: that the tradition's account of the symbolic order, framed on the model of language, is incomplete in a manner music exhibits, since musical organisation is ordered and transmissible while operating outside linguistic signification; and that the account is without history, so that the conditions under which the exterior position acquires its organising power are left unexamined.

2.5 The Gap Addressed by the Integration

This section states the contribution claimed. Its objective is to state the standard that an integrative contribution must meet and to identify the connections this book supplies. It proceeds by stating the standard, naming the connections, and recording the consequence of failure.

The standard is that an integration is worth making where it permits statements that the separate literatures do not permit. A shared vocabulary does not meet it.

Requirement 2.5.1. (Standard for the integration). *An integrative account is supported where it licenses a statement in one domain drawn from a result established in another, which neither domain licenses alone.*

Three such connections are claimed and are tested in the Parts indicated.

The first connects ritual studies to music history. Ritual traditions maintain normative literatures in which participants articulate the relations their practice enacts, and secular musical practices of most periods do not. The connection supplies a procedure for reconstructing relational fields where such articulation is available, and carries the procedure to periods where it is absent. Part III establishes the procedure and Part IV applies it.

A relation between the first connection and the third is anticipated here, and its resolution is reported in the final chapter. The two are presented separately because they draw upon different literatures and were expected to yield different results. Chapter 70 reports that they were delivered by a single result, so that the book claims two connections here and delivers one.

The second connects the study of performance coordination to historical musicology. Coordination among performers has been studied with quantitative methods, and the results have rarely been brought to bear on historical questions. Under a common description of coordination, a claim that an ensemble became a differently coordinated system acquires a form in which evidence bears upon it. Part IV and Part VIII develop the connection.

The third connects the analysis of variable realisation across traditions. A fixed notated or textual layer with a variable realised layer occurs in liturgical chant, in figured bass and in modally organised improvisation, and the three are studied by separate literatures. Part VIII states the common structure and the question of identifiability that it raises.

The consequence of failure is recorded. Where a connection licenses no statement that the separate literatures withhold, the integration has supplied a vocabulary and nothing further, and Chapter 70 reports the outcome for each of the three. The outcome reported there is mixed: two of the three were delivered by one result, and the remaining connection is undelivered for want of a measurement the relevant literature has not produced.

2.6 Summary of Results

This chapter has established the following. The analysis of musical structure as a system of relations and transformations is established within music theory and is inherited here, and what that literature leaves untreated is the relation between musical relations and relations obtaining outside the music, together with the historical mutation of the relational system itself. The treatment of music as situated social practice is established in ethnomusicology and the sociology of music, and supplies both inherited positions and a documented cautionary case concerning comparative inference from musical style to social organisation. The ecological and enactive treatment of musical perception is inherited for Part VI. The psychoanalytic account of the subject and the voice is engaged in Part VI with two amendments proposed. The contribution claimed is integrative, the standard for such a contribution is that it license statements the separate literatures withhold, and three connections are claimed and tested in the Parts indicated.

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Chapter 3

The Taxonomy of Musical Relations and the Measure of Relational Complexity

This chapter supplies the descriptive apparatus used throughout the book. Its role is to fix what counts as a musical relation, to sort such relations into levels, and to supply the measures by which a configuration is characterised. It undertakes to establish four things: a definition of a musical relation adequate to the range of cases treated; a sorting of relations into levels with a statement of how a relation at one level bears upon relations at another; the separation of relational complexity from musical complexity; and the identification of the failure mode toward which Chapter 1 directed the inquiry. It proceeds in five sections.

3.1 The Definition of a Musical Relation

This section fixes the term. Its objective is to give a definition covering relations among sounds, among persons, among implements and among institutions, since the argument requires all four. It proceeds by giving the definition, indicating what it admits, and stating what it excludes.

Definition 3.1.1. (Musical relation). *A musical relation is a dependence obtaining within a musical practice, such that what occurs at one position within the practice constrains or enables what may occur at another.*

The definition admits relations of several kinds. A relation between two sounding events, where the occurrence of the first constrains what may follow. A relation between two performers, where the action of one determines what the other may do at a given moment. A relation between a performer and an implement, where the construction of the implement constrains what may be executed upon it. A relation between a practice and an institution, where an institutional requirement determines what may be performed and by whom.

The definition excludes co-occurrence without dependence. Two performances proceeding in the same building at the same hour, with no consequence of either for the other, stand in no musical relation within the sense fixed here. The exclusion matters, because a framework admitting every co-occurrence describes nothing.

Claim 3.1.2. (Requirement of dependence). *Co-occurrence within a musical practice constitutes*

a musical relation only where the occurrence at one position bears upon what may occur at another, and the bearing is exhibited by the alteration that follows upon a change at the first position.

The claim supplies an operational test which recurs throughout the book: a proposed relation is exhibited by showing what changes at one position when the other is altered.

3.2 The Levels of the Taxonomy

This section sorts musical relations into levels. Its objective is to supply the headings under which a configuration is described, and to fix their order. It proceeds by naming the levels with the relations belonging to each.

Four groups of levels are distinguished.

The *material and acoustic* levels comprise relations among the physical properties of sounding bodies, among the sounds they produce, and between a sounding body and the space in which it sounds.

The *bodily and temporal* levels comprise relations between a performer's action and the sound produced, among the actions of performers coordinating with one another, and among sounding events distributed in time.

The *social and institutional* levels comprise relations among the positions occupied by participants, among the criteria of eligibility attaching to those positions, and between a practice and the institutions provisioning and regulating it.

The *symbolic and articulated* levels comprise relations between a practice and the accounts given of it by its participants, including cosmological, doctrinal and aesthetic articulations.

The order is one of increasing distance from the sounding event and carries no implication of priority. Part III found relations at the third and fourth levels bearing upon the second, and Part IV examines cases in which the first level constrains the third.

3.3 Propagation Across Levels

This section treats the bearing of a relation at one level upon relations at another. Its objective is to state what such bearing requires and to record the two directions in which it has been documented.

A relation at one level bears upon relations at another where a change in the first alters the second. The requirement is that of Section 1 applied across levels, and it is demanding: an articulated cosmological correspondence bears upon a temporal organisation only where an alteration in the correspondence would alter the organisation.

Two directions have been documented in this book. Upward propagation, from material constraint to social and articulated organisation, is examined in Part IV, where the properties of instruments constrain what an ensemble may attempt and thereby the institutions required to sustain it. Downward propagation, from articulated or institutional relations to bodily

and temporal organisation, is established in Part III in five distinct forms, which Chapter 26 enumerates.

Claim 3.3.1. (Asymmetry of documented propagation). *Propagation from the material toward the articulated levels and propagation from the articulated toward the temporal levels are both documented in this book, and neither is established as the general case.*

3.4 Relational Complexity Distinguished From Musical Complexity

This section separates two properties frequently conflated. Its objective is to establish their independence and to supply the measures used throughout.

The two properties are the complexity of the relational field within which a practice is conducted, and the elaboration of the sounding organisation itself. The measures are fixed in Chapter 12, where the distinction is applied to ritual material, and their general form is given here.

Relational complexity is assessed by the number of distinct dependences obtaining within a practice, the number of positions differentiated within it, and the degree of interdependence among the actions assigned to those positions. Musical elaboration is assessed by the number of simultaneously distinguishable sounding parts, the range of pitch and durational distinctions employed, and the extent to which the sounding material is transmitted as fixed.

Claim 3.4.1. (Independence of relational complexity and musical elaboration). *A practice may exhibit high relational complexity with minimal musical elaboration, and a practice may exhibit extensive musical elaboration within a relational field of few dependences, so that neither property determines the other.*

The claim is established by cases in Part III and is stated here because it governs the reading of every description in the book. A tradition sounding little is not thereby relationally simple.

3.5 Relations That Consume the Distinctions They Operate On

This section identifies the failure mode toward which Chapter 1 directed the inquiry. Its objective is to characterise it and to supply the criterion distinguishing it from the sustaining case.

Chapter 1 established that differentiation is generated by relation and that the phenomenon requiring explanation is the failure of a process to sustain the differentiation it generates. The failure takes a definite form: the relation continues to operate while the distinctions among the parties it relates diminish, until the positions become interchangeable and the differentiated organisation is lost.

Definition 3.5.1. (Consumption of differentiation). *A relational process consumes differentiation where the operation of the relation reduces the distinctions obtaining among the parties it relates, so that*

positions formerly differentiated become interchangeable.

Definition 3.5.2. (Sustaining of differentiation). *A relational process sustains differentiation where the operation of the relation maintains or increases the distinctions obtaining among the parties it relates.*

The pair supplies an axis along which configurations are placed, and the axis is non-evaluative. A process consuming differentiation may be desired by its participants and a process sustaining it may be onerous. The criterion records what happens to the distinctions and supplies no assessment of it, in conformity with the second position declined in Chapter 1.

Musical instances of both occur. Unison delivery by a large body is a configuration in which differentiation among the delivering parties is deliberately minimised. Ensemble textures in which parts are progressively assimilated to a single line exhibit consumption within a single performance. Part VI treats the consumption of differentiation within fields of participation.

3.6 Summary of Results

This chapter has established the following. A musical relation is a dependence within a musical practice such that what occurs at one position constrains or enables what may occur at another, and a proposed relation is exhibited by the alteration following a change at one of its positions; co-occurrence without dependence is excluded. Musical relations sort into material and acoustic, bodily and temporal, social and institutional, and symbolic and articulated levels, whose order carries no implication of priority. A relation at one level bears upon another where a change in the first alters the second, and propagation in both directions is documented in this book with neither established as the general case. Relational complexity and musical elaboration are independent properties, so that a tradition sounding little is not thereby relationally simple. The consumption and the sustaining of differentiation supply a non-evaluative axis along which relational processes are placed, and the failure mode identified in Chapter 1 is thereby given a definite form.

Chapter 4

The Embedding Hypothesis and the Criterion of Operation

This chapter states the central hypothesis of the book and the criterion by which it is tested. Its role is to distinguish embedding from two relations with which it is commonly confused, to supply a test that a claim of embedding must pass, and to state the conditions under which the hypothesis fails. It undertakes to establish four things: that representation, expression and embedding are three distinct relations between a musical organisation and a relational world; that a claim of embedding is tested by the operation of the relation within the practice; that operation divides into an external and an internal form of which the second is the demanding one; and that the inverse inference, from a musical organisation to the relational world in which it arose, requires a condition of identifiability which is generally unsatisfied. It proceeds in five sections.

4.1 Representation, Expression and Embedding Distinguished

This section fixes three relations. Its objective is to separate them so that evidence bearing on one is not taken to support another. It proceeds by defining each and stating the differences.

Definition 4.1.1. (Representation). *A musical organisation represents a relational configuration where it stands for that configuration by a convention available to participants, so that a hearer competent in the convention recovers the configuration from the sounding.*

Definition 4.1.2. (Expression). *A musical organisation expresses a relational configuration where the states of participants arising within that configuration are manifested in the sounding.*

Definition 4.1.3. (Embedding). *A relational configuration is embedded in a musical organisation where the configuration enters the generative organisation of the sounding itself, so that the dependences constituting the configuration operate among the sounding events.*

The differences are these. Representation requires a convention and a competent hearer; embedding requires neither, since a dependence may operate among sounding events whether or not anyone recognises it as standing for anything. Expression concerns the states of participants; embedding concerns the organisation of the sound. A musical organisation may embed a configuration that it neither represents nor expresses, and may represent a configuration that it does not embed.

Claim 4.1.4. (Independence of the three relations). *Representation, expression and embedding are independent relations between a musical organisation and a relational configuration, and evidence establishing one of them supports neither of the others.*

The claim disposes of a common form of argument in which a conventional association between a musical feature and a social meaning is offered as evidence that the social relation shapes the music. The association establishes representation. Embedding requires separate evidence, and Section 4.2 states what that evidence must show.

4.2 The Criterion of Operation

This section supplies the test. Its objective is to state the criterion by which a claim of embedding is assessed, and to make explicit what the criterion requires. It proceeds by stating the criterion, giving its rationale, and stating what it excludes.

Definition 4.2.1. (Operation). *A relational configuration operates within a musical practice where an alteration of the configuration would produce an alteration in the practice, and the dependence is exhibited by cases in which the configuration differs.*

Claim 4.2.2. (Criterion of embedding). *A claim that a relational configuration is embedded in a musical organisation is supported where the configuration operates within the practice in the sense of Definition 4.4, and is unsupported where the configuration may be altered without consequence for the practice.*

The rationale is the requirement of Chapter 3, applied here to the relation between a musical organisation and a world outside it. A dependence is exhibited by what changes when its terms change.

The criterion excludes a class of claim that would otherwise pass. Where a tradition articulates a cosmological correspondence between its musical materials and an order of the world, the articulation establishes that the correspondence is held. It establishes nothing about operation. Where the correspondence could be revised without any change in what is sounded, by whom, when, or how, the criterion is unsatisfied and no claim of embedding is supported.

4.3 External and Internal Operation

This section divides the criterion. Its objective is to distinguish two forms of operation and to establish that the second is the one the central hypothesis requires. It proceeds by defining each, stating the difference, and recording the consequence.

Definition 4.3.1. (External operation). *A relational configuration operates externally within a musical practice where it governs which materials are sounded, by whom, at what point, with which implements, and in which setting.*

Definition 4.3.2. (Internal operation). *A relational configuration operates internally within a mu-*

sical practice where it governs the organisation of the sounding itself, including its temporal structure, the dependences among simultaneous or successive events, and the melodic determination of its material.

The difference is that external operation is compatible with a sounding organisation determined entirely by other factors. A rule assigning a chant to a particular officiant on a particular day governs the occasion of the sounding and leaves the internal organisation of that chant untouched. Internal operation reaches the organisation.

Claim 4.3.3. (Location of the hypothesis in internal operation). *The hypothesis that a relational world enters the generative organisation of a musical practice is tested by internal operation, and evidence of external operation, however extensive, supports it no further than the occasion of the sounding.*

The claim sets the standard against which Part III reports its results, and the distinction between the two forms is applied in every tradition chapter.

4.4 Conditions of Failure

This section states what would defeat the hypothesis. Its objective is to fix the conditions in advance, so that the reports of Parts III and IV may be assessed against them.

Three conditions are stated.

The hypothesis fails for a given practice where the internal organisation of its sounding is shown to be determined by its verbal material, its prescriptive apparatus and the material conditions of its performance taken together, with no residue attributable to a relational configuration.

The hypothesis fails generally where no instance of internal operation is established across a body of cases assembled for the purpose.

The hypothesis is weakened, without failing, where the instances of internal operation established run through conditions that hold for any collective activity whatever, so that the musical case exhibits nothing specific to it. Part III returns a mixed result on this third condition and reports it in Chapter 26.

4.5 The Inverse Inference and the Condition of Identifiability

This section treats the inference in the opposite direction. Its objective is to distinguish it from the hypothesis, to state the condition it requires, and to record that the condition is generally unsatisfied. It proceeds by stating the inference, identifying its defeater, and stating the consequence for the book.

The inference in question proceeds from an observed musical organisation to the relational configuration within which it arose. Its attraction is considerable, since musical materials survive from periods whose relational configurations are otherwise poorly documented.

The inference requires that the map from configurations to organisations be invertible over the relevant range, and its defeater is multiple realisation: where several configurations produce the same organisation, the observed organisation determines none of them.

Requirement 4.5.1. (Identifiability). *An inference from a musical organisation to a relational configuration is supported only where the range of configurations capable of producing that organisation has been bounded, and the bounding is exhibited by cases in which differing configurations produced differing organisations.*

Part III supplies material bearing directly on the requirement, and the result is negative: cases are established in which a fixed verbal text with a fixed prescriptive apparatus receives materially different sounding realisations, which establishes that the map is not invertible for those cases. Part VIII treats the question formally and states the conditions under which a bounded inversion would be available.

The consequence for the book is that the inverse inference is not employed. Relational configurations are established from sources independent of the music, and the musical evidence is brought to bear afterward.

4.6 Summary of Results

This chapter has established the following. Representation, expression and embedding are independent relations between a musical organisation and a relational configuration, and evidence for one supports neither of the others. A claim of embedding is tested by operation, and a configuration that may be altered without consequence for the practice supports no such claim, which excludes articulated correspondences that leave practice untouched. Operation divides into an external form governing the occasion of the sounding and an internal form governing its organisation, and the hypothesis is tested by the second. Three conditions of failure are stated in advance. The inverse inference from musical organisation to relational configuration requires a condition of identifiability which Part III shows to be unsatisfied for the cases examined, and the inference is accordingly not employed in this book.

Chapter 5

Standards of Evidence and the Constraints the Argument Accepts

This chapter fixes the methodological commitments of the book. Its role is to state what kinds of claim are advanced, what evidence supports each, and what forms of argument the book forbids itself. It undertakes to establish four things: a classification of the claims advanced with the standing of each; the classes of evidence available and the reach of each; a set of prohibitions constraining every subsequent chapter; and the conditions under which the framework as a whole would be abandoned. It proceeds in five sections.

5.1 Classes of Claim and Their Standing

This section classifies the claims advanced in the book. Its objective is to make the standing of each visible in its formulation.

Four classes are used, and each is marked in the text by the form of its statement.

A *definition* fixes a term for use in the book. It is assessed by its usefulness and its consistency with the cases treated, and it asserts nothing about the world.

A *claim* asserts a result established by the material presented. It is assessed by the evidence cited at the point of statement.

A *hypothesis* asserts a proposition the book treats as open and examines. It is assessed by the conditions of failure stated with it.

A *requirement* states a constraint the book imposes upon itself. It is assessed by whether the book observes it.

Requirement 5.1.1. (Marking of standing). *Every substantive proposition in this book is stated as a definition, a claim, a hypothesis or a requirement, and the propositions of the second class carry the evidence supporting them at the point of statement.*

5.2 Classes of Evidence and Their Reach

This section states what evidence the book uses and what each class can support. Its objective is to prevent evidence of one class from being taken to support a claim requiring another.

Five classes are distinguished, and the reach of each is stated with it.

Period documentary sources attest what was recorded, prescribed or argued at the date of their composition. They support claims about prescription, institution and articulation at that date.

Material remains support claims about what implements existed and what they were capable of producing, within the limits of what may be inferred from an object.

Notated sources support claims about what was written at their date, and support claims about sound only under an account of the relation between the notation and the practice, which must be supplied.

Documentation of practice, including recording, transcription and ethnographic description, supports claims about the practice at the date of documentation.

Quantitative measurement of performance supports claims about the measured performances, and its extension to a repertory or a period requires an argument about the sample.

Requirement 5.2.1. (Correspondence of evidence to claim). *A claim about sound at a date is supported only by evidence attesting sound at that date, and a claim extending beyond the evidence cited is marked as reconstruction or as inference with the assumption it requires named.*

5.3 Constraints the Argument Accepts

This section states the prohibitions. Its objective is to fix them in advance, since each blocks a form of argument that the framework of this book makes available and that would otherwise be tempting. It proceeds by stating four constraints with the reason for each.

Requirement 5.3.1. (Prohibition of the mirror inference). *A musical organisation is not asserted to mirror, reflect or represent a social configuration on the strength of a structural resemblance between them, since resemblance is a relation the analyst supplies and the criterion of Chapter 4 is unsatisfied by it.*

Requirement 5.3.2. (Prohibition of unoperative embedding). *A relational configuration is not asserted to be embedded in a musical organisation where the configuration may be altered without consequence for the practice, however elaborately the tradition articulates the correspondence.*

Requirement 5.3.3. (Prohibition of the generative warrant). *The generative character of a relational process is not offered as a ground for approving it, and no configuration is commended on the ground that it sustains generation, since Chapter 1 establishes that a relation may consume the parties it relates.*

Requirement 5.3.4. (Prohibition of the developmental ordering). *Musical configurations are not ordered along a scale of development, and a configuration employing fewer simultaneous parts or a narrower range of distinctions is not treated as an earlier or lesser form of one employing more.*

The fourth constraint requires a word of justification, since a book treating historical trajectories may appear to require the ordering it forbids. The justification is that the ordering is

a nineteenth-century inheritance which the comparative study of music has repudiated, and that the question the book asks about historical change concerns the conditions under which particular relational architectures became feasible, which is answerable without ranking the architectures.

5.4 The Handling of Contested Questions

This section states the practice adopted where scholarship is divided. Its objective is to fix the practice and to distinguish it from two alternatives.

Requirement 5.4.1. (Presentation of contested questions). *Where a question bearing on the argument is contested among scholars, the competing positions are stated with their proponents and their evidential grounds, the question is left open, and the consequences for the argument of each position are indicated.*

The requirement is distinguished from two alternatives. Silent adoption of one position, which presents a contested matter as settled. And omission of the question, which removes the material from the argument and thereby conceals the dependence of the argument upon it.

Where the argument requires a determinate answer to a contested question, the requirement is that the dependence be stated and the argument marked as conditional. Where the argument survives on any of the competing positions, that fact is stated, since it strengthens the argument.

A related practice governs traditions treated in this book. Doctrinal and normative positions internal to a tradition are reported as the tradition's own and are not adjudicated, and where a tradition's own classification of its practice differs from the analytic vocabulary of the book, the classification is reported and the divergence recorded.

5.5 Conditions Under Which the Framework Would Be Abandoned

This section states what would defeat the book's approach as a whole. Its objective is to fix the conditions in advance and to distinguish them from the conditions defeating the central hypothesis, which Chapter 4 states.

Three conditions are stated.

The framework is defeated where the distinction between external and internal operation proves inapplicable, in the sense that every case falls equally under both forms, since the distinction carries the hypothesis.

The framework is defeated where the definition of a musical relation admits every co-occurrence, in the sense that the requirement of dependence in Chapter 3 fails to exclude cases, since a framework describing everything describes nothing.

The framework is weakened, without being defeated, where the integrative connections

claimed in Chapter 2 license no statements that the separate literatures withhold. The final chapter reports the outcome for each connection, and the report is the book's account of its own contribution.

5.6 Summary of Results

This chapter has established the following. Propositions are stated as definitions, claims, hypotheses or requirements, with the standing of each visible in its formulation and the evidence for a claim carried at the point of statement. Five classes of evidence are distinguished with the reach of each fixed, and a claim about sound at a date is supported only by evidence attesting sound at that date. Four constraints are accepted: against the mirror inference, against embedding claimed without operation, against the use of generative character as a warrant, and against the developmental ordering of musical configurations. Contested questions are presented with their competing positions and left open, with the argument's dependence upon them stated; positions internal to a tradition are reported and not adjudicated. Three conditions are fixed under which the framework would be abandoned or weakened, and the final chapter reports the outcome of the third.

Part II

The Relational Grammar of Music

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Chapter 6

Temporal Coupling and the Organisation of Musical Time

This chapter opens the descriptive apparatus for musical material. Its role is to supply the vocabulary in which temporal organisation is described throughout the book, and to establish the distinction on which the historical and ritual chapters most heavily rely. It undertakes to establish four things: that temporal coupling among sounding parties is the layer at which relations become executable; that a musical field either supplies a maintained reference against which events are placed or supplies none, and that the two cases require different accounts; that coordination of collective delivery admits of two solution families, of which one requires an institution and the other an office; and that the measures of temporal organisation used in this book are stated with their limits. It proceeds in five sections.

6.1 Coupling as the Executable Layer of Musical Relation

This section states why temporal organisation is treated first. Its objective is to establish that relations among sounding parties are realised through temporal coordination, so that the temporal layer is where a relation becomes something participants do. It proceeds by stating the position, giving the argument, and recording its consequence for the order of the book.

A relation among sounding parties, in the sense fixed by Chapter 3, obtains where what one party does bears upon what another may do. In a sounding practice the bearing is realised in time: a party responds, anticipates, sustains, withholds or interrupts, and each of these is a temporal determination.

Claim 6.1.1. (Priority of the temporal layer for executable relation). *A relation among sounding parties is realised through the temporal placement of their actions, so that the temporal organisation of a practice is the layer at which its relations are executed.*

The claim carries no priority of importance. Relations of pitch, of timbre and of institution are treated in the chapters following, and the historical material of Part IV turns substantially on the third. The priority asserted is one of realisation: a relation among parties who sound is a relation about when they sound.

6.2 Reference and Its Absence in Temporal Organisation

This section fixes the central distinction of the chapter. Its objective is to distinguish fields supplying a maintained temporal reference from fields supplying none, and to characterise each. It proceeds by defining the two cases, giving their properties, and stating why the distinction is treated as fundamental.

Definition 6.2.1. (Referenced temporal field). *A musical field is temporally referenced where a maintained periodic reference is present, against whose positions sounding events are placed and by reference to which their placement is described.*

Definition 6.2.2. (Unreferenced temporal field). *A musical field is temporally unreferenced where no maintained periodic reference is present, and the placement of a sounding event is determined by its relation to the events adjacent to it.*

The properties of the two differ throughout. In a referenced field an event has a position independent of the events surrounding it: an entry occurs at a location within the periodic scheme whether or not other parties are sounding. In an unreferenced field an event has placement only relative to its neighbours: an entry follows a preceding event, at a distance determined by the practice, and its placement admits no description independent of what precedes it.

The consequence is that a description of a referenced field may proceed by assigning co-ordinates, and a description of an unreferenced field must proceed by stating relations. The two require different analytical apparatus, and Part VIII treats the matter formally under the heading of background dependence.

Instances of both were documented in Part III. Metered sections of collective delivery in the traditions of Chapters 14 and 15 are referenced fields. The chant traditions of Chapters 16, 19 and 20, and the text-governed delivery of Chapters 21 and 22, are unreferenced fields.

Claim 6.2.3. (Coexistence of referenced and unreferenced organisation within a practice). *A single practice may organise some of its material by maintained reference and other material without it, and the alternation may correspond to a distinction among the positions delivering the material.*

The claim reports a result of Chapter 14, where metered organisation coincided with collective delivery and unmetered organisation with solo delivery.

6.3 Coordination of Collective Delivery

This section treats the coordination problem. Its objective is to state the problem precisely, to set out the two solution families documented, and to identify what each requires of the community adopting it. It proceeds accordingly.

The problem is this. Where several parties deliver material that is to sound together, their actions must be placed at compatible times, and each party's information about the others is

limited to what it can perceive while acting.

Definition 6.3.1. (Referenced coordination). *Collective delivery is coordinated by reference where a maintained periodic signal, audible to all parties, supplies the placement against which each party acts.*

Definition 6.3.2. (Acquired coordination). *Collective delivery is coordinated by acquisition where the parties place their actions by a common practice previously learned, with a leading party initiating and the others following.*

The two differ in what they require. Referenced coordination requires that some party produce the signal, which in the documented cases is an assigned function attaching to a position within the practice. Acquired coordination requires that the parties have learned the material in common, which is a condition on the institution of transmission.

Claim 6.3.3. (Institutional condition on acquired coordination). *Coordination by acquisition requires that the participating parties have acquired the practice from a common line of instruction, so that a body assembled from divergent lines of instruction is unable to coordinate by this means.*

The claim reports a result of Chapter 16 and is stated here in its general form, since Part IV returns to it in treating ensembles assembled from trained professionals under a score.

Two further observations are recorded. Referenced coordination scales with the audibility of the signal, and Part III noted that spatially extended assemblies require the signal to be relayed. Acquired coordination scales with the reach of the institution of transmission, and Part IV treats the historical case in which a notated score and a rehearsal regime extended that reach.

6.4 Elements of Referenced Organisation

This section describes referenced fields in detail. Its objective is to supply the terms used for such fields throughout the book. It proceeds by treating the reference itself, the grouping imposed upon it, and the placements available against it.

The reference is a periodic succession of positions. Its rate is the property by which performances of the same material are compared, and its maintenance is the condition of the field's existence: where the reference lapses, the field becomes unreferenced.

Grouping assigns unequal weight to the positions of the reference, so that positions recur in patterns of strong and weak. The grouping supplies a second periodicity above the first and permits an event to be described by its position within the group.

Placements available against a reference include coincidence, in which an event falls at a position; displacement, in which an event falls at a stated distance from a position and is heard against it; and division, in which a party's events subdivide the intervals between positions. Where two parties maintain patterns of differing period against a common reference, the field carries simultaneous periodicities, and the relation among them is a relation of the parties.

6.5 Measures of Temporal Organisation and Their Limits

This section states the measures used in the book. Its objective is to give them with their limits, since Part III found the measure of elaboration to understate certain traditions.

Three measures are used. The *rate of textual advance* is the quantity of verbal material delivered per unit of time, and it distinguishes recitational delivery from extended melismatic delivery. The *density of events* is the number of distinct sounding events per unit of time. The *number of independent temporal streams* is the count of parties maintaining patterns whose periodicity or grouping differs.

Three limits attach to them, and each was established in Part III.

The measures apply to sounding events, and a practice in which sounding is generated by prescribed bodily movement organises sound and movement together; a measure applied to the sounding alone understates such a practice. The measures presuppose that events are individuated in the way the analyst's transcription individuates them, and a tradition employing distinctions the transcription fails to record is understated. And the measures apply to a body of material, so that a tradition maintaining materials of different character receives no single value.

Requirement 6.5.1. (Statement of the measured object). *A measure of temporal organisation reported in this book is stated with the body of material to which it applies and with the mode of documentation from which it was taken.*

6.6 Summary of Results

This chapter has established the following. A relation among sounding parties is realised through the temporal placement of their actions, so that temporal organisation is the layer at which relations are executed. Musical fields divide into those supplying a maintained periodic reference and those supplying none, the two require different analytical apparatus, and a single practice may organise different material in each way, with the alternation corresponding in a documented case to a distinction among delivering positions. Coordination of collective delivery admits two solution families: coordination by an audible maintained reference, which requires an assigned function within the practice, and coordination by common acquisition, which requires that the parties share a line of instruction and fails where they do not. The elements of referenced organisation are the reference, the grouping imposed upon it, and the placements available against it, including simultaneous periodicities of differing period. Three measures of temporal organisation are adopted with three limits attached, and every measure reported is stated with its object and its mode of documentation.

Chapter 7

Melodic Trajectory and the Constitution of a Musical Part

This chapter treats the organisation of a single line and the relations among several. Its role is to establish, in technical terms, the position asserted in Chapter 1, namely that a musical part acquires its identity through its relations to other parts. It undertakes to establish three things: that a melodic trajectory is described by relations among its successive events; that a part is constituted as a part by its relations to what sounds alongside it; and that differentiation among parts admits of degrees, with the terms for those degrees fixed here. It proceeds in four sections.

7.1 The Description of a Melodic Trajectory

This section fixes the description of a single line. Its objective is to state the relations by which a trajectory is characterised, and to identify what a description in absolute terms omits. It proceeds by giving the relations, stating the alternative, and recording the consequence.

A melodic trajectory is a succession of sounding events ordered in time and differentiated in pitch. It is characterised by relations among its successive events: the direction of movement between adjacent events, the magnitude of that movement, the recurrence of pitches previously sounded, and the relation of events to any pitch the practice treats as a point of reference.

A description in absolute terms is available where a practice fixes its pitches by an external standard. Such a description records the pitches sounded and omits the relations among them, so that two trajectories differing throughout in absolute pitch and agreeing throughout in their intervals receive different descriptions.

Claim 7.1.1. (Relational characterisation of melodic identity). *Trajectories agreeing in the relations among their successive events are treated as the same melodic material within the practices examined in this book, and a description recording absolute pitch alone fails to record the identity the practices maintain.*

The claim is the ground of the relational treatment of melodic material throughout the book, and it is inherited from the music-theoretical literature reported in Chapter 2 together with the reservations stated there.

Two further properties of a trajectory are recorded because Part III relied upon them. The *compass* is the extent of pitch space traversed. The *rate of textual advance*, where a trajectory carries verbal material, distinguishes delivery in which each syllable receives one event from delivery in which a syllable is extended across many.

7.2 The Constitution of a Part Through Relation

This section establishes the position asserted in Chapter 1. Its objective is to show that a part is constituted as a part by what it does with respect to other parts, and to identify the relations doing the constituting. It proceeds by stating the position, giving the relations, and drawing the consequence.

A part within a musical texture is distinguished from the others by the relations in which it stands to them. Four such relations are distinguished here and are used throughout the book.

Entry and cessation distinguish a part by when it begins and ends with respect to the others. *Answering* obtains where the material of one part reproduces, transposes or inverts material previously sounded by another. *Complementation* obtains where the events of one part fall at positions the other leaves unoccupied. *Sustaining* obtains where one part maintains a pitch across the movement of another.

Claim 7.2.1. (Constitution of a part through its relations). *A part within a musical texture is individuated by its entries and cessations, its answering of other parts, its complementation of them and its sustaining against them, so that its identity as a part is supplied by those relations.*

The consequence is the one drawn in Chapter 1. A texture is not the combination of parts given in advance; the parts are established through the relations constituting the texture. Where the relations lapse, the parts lapse with them, and the sounding continues without differentiated parts.

7.3 Degrees of Differentiation Among Parts

This section fixes the terms for degrees of differentiation. Its objective is to supply a graded vocabulary covering the range from complete coincidence to full independence, since Part III required it and Part IV requires it further. It proceeds by giving the terms in order and stating what distinguishes each from its neighbours.

Definition 7.3.1. (Coincident delivery). *Parties deliver coincidently where all sound the same material at the same time, so that no differentiation among them obtains in the sounding.*

Definition 7.3.2. (Variant delivery). *Parties deliver variantly where all sound versions of one material simultaneously, differing in ornament, in division or in the precise placement of events, so that differentiation obtains without independence of material.*

Definition 7.3.3. (Independent delivery). *Parties deliver independently where each sounds material distinct from the others, related to it by the relations of Section 2.*

The three are points on a graded range and admit intermediate cases. Their utility is that they separate two properties frequently conflated: the number of parties sounding, and the number of distinguishable strands in the sounding. A large body delivering coincidentally supplies one strand; two parties delivering independently supply two.

Claim 7.3.4. (Independence of party count from strand count). *The number of parties sounding within a musical field and the number of distinguishable strands in its sounding are independent quantities, so that neither determines the other.*

The claim is required by the material of Part III, where traditions differing greatly in the size of the sounding body were found to differ little in the number of strands maintained, and it governs the treatment of orchestral texture in Part IV.

Variant delivery warrants a further remark, since the analytical literature has often treated it as a defective approximation to independent delivery. The traditions of Part III supply cases in which variant delivery is the practice's own object, achieved deliberately and assessed by criteria internal to it. The prohibition of developmental ordering fixed in Chapter 5 applies here directly: variant delivery is a solution of its own and is not an incomplete instance of another.

7.4 Trajectory Under Transformation

This section treats the persistence of melodic identity across alteration. Its objective is to state the operations under which a practice treats material as preserved, since Part IV requires the notion. It proceeds by giving the operations and stating the limit of the account.

Practices treat melodic material as preserved under specified alterations. Transposition preserves the relations among successive events while altering their absolute pitch. Augmentation and diminution alter the durations while preserving their proportions. Ornamentation adds events between those of the original without altering the relations among the original events. Reduction removes events, retaining a subset.

Which operations a practice admits is a property of the practice. A practice admitting extensive ornamentation treats as one material what another practice would treat as two.

Requirement 7.4.1. (Statement of the admitted operations). *Where this book asserts that two performances realise the same material, the operations under which the practice treats the material as preserved are stated, and the assertion is understood as relative to them.*

The requirement bears directly upon Part III, where the divergence of realisations across communities was the object of study, and the question of whether two realisations constitute the same material was answered by the practices themselves.

7.5 Summary of Results

This chapter has established the following. A melodic trajectory is characterised by relations among its successive events, and practices treat trajectories agreeing in those relations as the same material, so that a description in absolute pitch fails to record the identity practices maintain. A part within a texture is individuated by its entries and cessations, its answering, its complementation and its sustaining, so that its identity is supplied by relation and lapses where the relations lapse. Delivery ranges from coincident through variant to independent, and the number of parties sounding is independent of the number of distinguishable strands; variant delivery is treated as a solution of its own in conformity with the prohibition of developmental ordering. Assertions that two performances realise the same material are stated relative to the operations under which the practice concerned treats material as preserved.

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Chapter 8

Simultaneous Relation and the Functions of a Coordinating Centre

This chapter treats relations among events sounding at the same time and the large-scale organisations built upon them. Its role is to supply the terms in which Part IV describes the transformations of Western musical architecture, and to do so without importing the theoretical apparatus of any one period as though it were neutral. It undertakes to establish four things: that simultaneity supplies a class of relation distinct from succession; that a practice may institute a reference pitch whose functions may be enumerated separately; that those functions are separable, so that a practice may institute some and withhold others; and that heterophonic organisation constitutes a distinct solution to the problem of simultaneous sounding. It proceeds in five sections.

8.1 Relations Among Simultaneous Events

This section fixes the description of simultaneous sounding. Its objective is to state the relations obtaining among events sounding together, and to distinguish them from relations of succession.

Where two or more events sound together, relations obtain among them that are absent where the same events sound in succession. The interval between two simultaneous pitches is available to a hearer as a single object of attention. The events share a duration, so that their beginnings and endings stand in relations of coincidence and overlap. And the combination possesses properties belonging to it as a combination, including the degree to which its components are heard as fusing into one sonority or as remaining separately audible.

Definition 8.1.1. (Simultaneous relation). *A simultaneous relation obtains between sounding events whose durations overlap, and comprises the interval between their pitches, the relation between their onsets and terminations, and the degree to which they are heard as separate.*

The third component is of particular consequence for the argument of this book. A combination heard as one sonority carries no differentiation among its components for the hearer; a combination heard as separate strands does. The distinction between consumption and sustaining of differentiation fixed in Chapter 3 has an immediate application at this level.

8.2 Stability and Its Assignment

This section treats the assignment of stability to simultaneous combinations. Its objective is to establish that practices sort combinations by stability and to record that the sorting is a property of the practice.

Practices employing simultaneous sounding sort combinations into those treated as resting points and those treated as requiring continuation. The sorting governs where a passage may stop, which combinations may be prolonged, and which require a specified succession.

Claim 8.2.1. (Practice-relative assignment of stability). *The sorting of simultaneous combinations into stable and unstable is a property of the practice employing them, and a combination treated as requiring continuation in one practice may be treated as a resting point in another.*

The claim blocks a form of argument that would otherwise be available in Part IV, in which the sorting maintained by one period's practice is treated as given and the practice of another period is described as departing from it. Where a practice's sorting differs, the description records the difference and refrains from treating either as the standard.

8.3 The Functions of a Coordinating Centre

This section treats the large-scale organisation of pitch. Its objective is to enumerate the functions a reference pitch may perform, to establish that the functions are separable, and thereby to supply Part IV with a vocabulary independent of any one period's theory. It proceeds by naming the functions, stating their separability, and recording the consequence.

A practice may institute a pitch, or a combination built upon it, as a reference to which other material is related. Four functions may be distinguished.

The *function of resolution* obtains where the reference supplies the point at which a passage may conclude. The *function of orientation* obtains where the position of any material is describable by its relation to the reference. The *function of long-range organisation* obtains where departure from and return to the reference organises a span exceeding the phrase. The *function of expectation* obtains where competent hearers anticipate continuations on the basis of the reference, so that a continuation may be delayed or withheld to effect.

Claim 8.3.1. (Separability of the functions of a centre). *The functions of resolution, orientation, long-range organisation and expectation are separable, so that a practice may institute some of them and withhold others, and a practice instituting a reference pitch does not thereby institute all four.*

The claim is what permits Part IV to describe historical transformations without the apparatus of any one period. A transformation may consist in the acquisition of the third function by a practice already possessing the first two, and such a description is available without asserting that the earlier practice was an incomplete instance of the later.

Two cautions are attached, and both were established in Part III.

The vocabulary of departure, tension and return by which the third function is customarily described belongs to a theoretical tradition of a particular period and place. It is used in this book as a description of the function and carries no implication that practices lacking the function are thereby lacking.

A theoretical classification may be superimposed upon a repertory already in use, as Chapter 19 documents for the modal ordering of the Latin liturgical repertory. Where a period's theory is used to describe an earlier repertory, the imposition is stated.

8.4 Heterophonic Organisation

This section treats a solution to simultaneous sounding distinct from those of Sections 1 to 3. Its objective is to characterise heterophony and to establish its standing as a solution of its own. It proceeds by defining it, distinguishing it, and recording the prohibition that governs its treatment.

Definition 8.4.1. (Heterophonic organisation). *A texture is heterophonic where several parties deliver versions of one melodic material simultaneously, differing in ornament, in division and in the placement of events, so that the simultaneous relations arising among them are consequences of the divergence among versions.*

Heterophony differs from the organisations of Section 3 in that its simultaneous relations are produced by variation among realisations of shared material, and arise without specification as combinations in their own right. The vertical dimension carries no independent specification, and the texture's density arises from the number of simultaneous versions and the extent of their divergence.

Claim 8.4.2. (Standing of heterophony as an independent solution). *Heterophonic organisation constitutes a solution to the problem of simultaneous sounding distinct from the specification of vertical combinations, and its assessment by criteria drawn from the latter misdescribes it.*

The claim applies the prohibition of developmental ordering fixed in Chapter 5. A heterophonic texture is not an early or defective instance of a texture with specified vertical combinations. It answers the same problem by another means, and the criteria proper to it concern the relation between the shared material and its realisations.

8.5 Simultaneity and the Sustaining of Differentiation

This section connects the material of the chapter to the central problem of the book. Its objective is to state how simultaneous organisation bears upon the sustaining and consumption of differentiation fixed in Chapter 3.

Three configurations may be distinguished by their treatment of differentiation among simultaneously sounding parties.

Where parties deliver coincidentally, differentiation among them is absent from the sounding by design.

Where parties deliver independently and their combinations are specified, the specification may operate in either direction. It may sustain differentiation, where the specification requires each party to retain a distinguishable position. It may consume differentiation, where the specification progressively assimilates the parties to a single sonority in which none is separately audible.

Where parties deliver variantly, differentiation is maintained by the divergence among realisations, and its extent is a function of how far the realisations are permitted to diverge.

Claim 8.5.1. (Bearing of simultaneous organisation upon differentiation). *The specification of simultaneous combinations may sustain or may consume the differentiation among the parties combined, and which it does is a property of the specification, leaving simultaneity itself neutral between them.*

The claim supplies Part IV with the terms in which the historical transformations of ensemble texture are assessed, and Part VI with the terms in which fields of participation are assessed.

8.6 Summary of Results

This chapter has established the following. Simultaneous relation comprises the interval between pitches, the relation between onsets and terminations, and the degree to which components are heard as separate, the last bearing directly upon the differentiation of parties. The sorting of combinations into stable and unstable is a property of the practice, and no practice's sorting is treated as the standard against which others are described. A coordinating centre may perform functions of resolution, orientation, long-range organisation and expectation, and these are separable, so that historical transformations may be described as the acquisition or loss of particular functions without treating any practice as an incomplete instance of another. Heterophonic organisation constitutes an independent solution to simultaneous sounding and is misdescribed by criteria drawn from the specification of vertical combinations. The specification of simultaneous combinations may sustain or consume differentiation among the parties combined, and which it does is a property of the specification.

Chapter 9

Material Constitution, Timbre, and the Heterogeneity of Sounding Agents

This chapter treats the material dimension of musical practice. Its role is to establish that the physical constitution of a sounding body enters the relational description in its own right, and to supply the terms in which ensembles of differentiated agents are described. It undertakes to establish four things: that a sounding body's material and mechanism constrain what may be executed upon it and thereby constrain the relations available to a practice; that timbral difference supplies a means of maintaining differentiation among simultaneous parties; that the classifications of instruments in general use each embed assumptions requiring statement; and that a restriction upon material resource is discharged within a practice by a redistribution of function. It proceeds in five sections.

9.1 Material Constitution as a Constraint on Available Relation

This section states the position of the chapter. Its objective is to establish that material properties enter the relational description, and to specify the manner in which they do so. It proceeds by stating the position, giving the mechanism, and distinguishing it from a stronger claim.

A sounding body possesses properties fixed by its material and construction: the pitches it can produce, the rapidity with which they can be changed, the durations for which they can be sustained, the loudness available, and the physical demands the execution places upon a performer.

These properties constrain the relations available to a practice employing the body. A body producing few pitches supplies material for sustaining and for punctuation and supplies none for melodic answering. A body whose sound decays rapidly cannot sustain against the movement of another party. A body requiring the performer's breath imposes periodic interruption upon the material it delivers.

Claim 9.1.1. (Constraint of available relation by material constitution). *The material and mechanical properties of a sounding body determine which of the relations enumerated in Chapters 6 to 8 may be executed upon it, so that the material constitution of a practice's instruments bounds the relational organisation available to it.*

A stronger claim is declined. The claim declined holds that material constitution determines the relational organisation a practice adopts. Part III supplies the evidence against it: traditions equipped with comparable material resources were found to adopt divergent organisations, and traditions under identical material restrictions were found to discharge them differently. Material constitution bounds the available organisations and selects among them not at all.

9.2 Timbre as a Means of Maintaining Differentiation

This section treats timbral difference. Its objective is to establish that difference of sound quality supplies a means by which simultaneous parties remain distinguishable, and to identify the properties that do the work.

Where several parties sound simultaneously, a hearer's capacity to attend to one of them separately depends upon properties distinguishing its sound from the others. Difference in the character of the sound supplies such properties, and it does so independently of difference in pitch or in temporal placement.

Claim 9.2.1. (Timbral maintenance of differentiation). *Difference in sound quality among simultaneously sounding parties permits their separate audibility independently of their pitch and temporal relations, and thereby supplies a means of sustaining differentiation within a texture.*

The claim identifies a resource for the problem fixed in Chapter 1: the sustaining of differentiation within a process relating many parties. A practice possessing bodies of differing sound quality possesses a means of maintaining distinguishable parties which a practice of uniform sound quality lacks.

The converse resource is recorded with it. Bodies of similar sound quality combine into sonorities in which the components are not separately audible, and a practice seeking a fused sonority employs the same property to that end. Whether a practice employs timbral difference to sustain differentiation or timbral similarity to consume it is a property of the practice, and Part IV treats the historical transformations of ensemble constitution in these terms.

9.3 Classification of Sounding Bodies and Its Assumptions

This section treats the classification of instruments. Its objective is to identify the assumptions embedded in the classifications in general use, and to state the practice adopted here. It proceeds by treating three classificatory principles and stating the practice.

Classification by the physical means of sound production sorts bodies according to what vibrates: a stretched string, an enclosed column of air, the substance of the body itself, a stretched membrane. The principle is systematic and travels across traditions, and its assumption is that the physical means is the salient property.

Classification by material sorts bodies according to the substance from which they are

made. The principle is employed within traditions, and Part III examined a case in which such a classification carried cosmological articulation. Its assumption is that material is salient, which within such a tradition it is.

Classification by function within an ensemble sorts bodies according to what they do: carrying melodic material, supplying sustained sonority, marking articulation, maintaining a reference. The principle is relational in the sense of this book, and its assumption is that the ensemble is the unit of description.

Requirement 9.3.1. (Statement of the classificatory principle). *Where sounding bodies are classified in this book, the principle of the classification is stated, and a classification belonging to a tradition is reported as that tradition's and is not offered as an analytic result.*

The requirement follows from the finding of Chapter 22 concerning categories imported from outside a tradition, and it applies with particular force to material classifications carrying articulated content.

9.4 Redistribution of Function Under Material Restriction

This section treats the case in which a practice is restricted in its material resources. Its objective is to state the general result established in Part III and to give its terms. It proceeds by stating the problem, giving the result, and recording its scope.

A practice may be restricted in the sounding bodies it may employ, whether by normative prohibition, by material scarcity or by the setting of performance. The restriction removes certain functions from the bodies that would otherwise perform them.

Claim 9.4.1. (Discharge of material restriction by redistribution of function). *Where a practice is restricted in the sounding bodies available to it, the functions those bodies would perform are redistributed among the resources that remain, including by differentiation of function within the body of participants.*

The claim generalises the result of Chapter 20, where a sustained sonority that other practices assign to an instrument was assigned to a portion of the singers. Its scope is limited by a second result of the same chapter: the redistribution adopted is underdetermined by the restriction, since practices under the same restriction were found to redistribute differently.

The two results together give the chapter's principal contribution to the argument. A restriction upon material resource has consequences that reach the internal organisation of the sounding, and it does not determine which consequences follow.

9.5 Ensembles of Heterogeneous Agents

This section treats assemblies of differentiated sounding bodies. Its objective is to state the properties by which such an assembly is described, and to identify the coordination problem

it raises. It proceeds by giving the properties and stating the problem.

An ensemble of differentiated bodies is described by three properties. Its *composition* is the set of bodies present and their number. Its *functional assignment* is the distribution among them of the functions enumerated in Section 3. Its *coupling structure* is the set of relations of dependence obtaining among the parties, in the sense of Chapter 3.

The three are independent. Two ensembles of identical composition may differ in functional assignment, and two of identical assignment may differ in coupling structure. The independence matters for Part IV, where the growth of ensemble composition is a documented fact and the accompanying changes in assignment and coupling are the object of inquiry.

Claim 9.5.1. (Independence of composition from coupling structure). *The composition of an ensemble, the assignment of functions within it and the structure of dependence among its parties are independent properties, so that an increase in the number of differentiated bodies present entails no change in the relations obtaining among the parties.*

The claim blocks an inference that would otherwise be available in Part IV, in which the historical growth of the orchestra is treated as an increase in relational complexity. The growth is a change in composition, and what it entailed for assignment and coupling requires separate demonstration.

The coordination problem raised by such an ensemble is that of Chapter 6, with an addition. Bodies of differing construction differ in the delay between a performer's action and the resulting sound, and in the precision with which onsets may be placed. Coordination among heterogeneous bodies accordingly requires accommodation that coordination among uniform bodies does not, and Part IV treats the institutional arrangements through which such accommodation was achieved.

9.6 Summary of Results

This chapter has established the following. The material and mechanical properties of sounding bodies bound the relations a practice may execute, and the stronger claim that they determine the organisation adopted is declined on the evidence of Part III. Timbral difference permits simultaneous parties to remain separately audible independently of pitch and temporal relation, supplying a means of sustaining differentiation, and timbral similarity supplies the converse means. Classifications of sounding bodies by physical means, by material and by ensemble function each embed an assumption, which is stated where a classification is used, and a tradition's own classification is reported as that tradition's. A restriction upon material resource is discharged by redistribution of function among the remaining resources, including by differentiation within the body of participants, and the redistribution adopted is underdetermined by the restriction. The composition of an ensemble, the assignment of functions within it and its coupling structure are independent, so that growth in composition entails no change in the relations obtaining among the parties.

Chapter 10

The Musical Relational Field and the Conventions of Its Description

This chapter assembles the descriptive apparatus of Parts I and II into the terms used throughout the remainder of the book. Its role is to fix the object of description, to state what a description of it comprises, and to record the conventions governing the descriptions given in the Parts that follow. It undertakes to establish four things: a definition of the musical relational field and of its constituents; a specification of what a complete description of such a field comprises; a distinction between the configurations a field admits and those it excludes, which supplies the term used throughout Part IV; and the conventions of notation, terminology and reference observed in the book. It proceeds in five sections.

10.1 The Musical Relational Field

This section fixes the principal object of description. Its objective is to define the field and to identify what it comprises. It proceeds by giving the definition, listing the constituents, and stating what the definition excludes.

Definition 10.1.1. (Musical relational field). *A musical relational field comprises the parties to a musical practice, the sounding bodies and implements they employ, the space in which they act, and the relations of dependence obtaining among all of these, taken together with the temporal extent over which those relations obtain.*

The constituents are four. The *parties* comprise all whose action or attention bears upon the practice, including performers, those directing them, and those attending. The *material provision* comprises the sounding bodies, implements and the space. The *relations* comprise the dependences enumerated in Chapter 3, obtaining among parties, among sounding events, and between the two. The *extent* is the span over which the field is taken to obtain, which may be a single performance, a recurrent occasion, or a practice maintained over a period.

The definition excludes nothing on the ground of its distance from the sounding event. An institution provisioning an ensemble is within the field where its provisioning bears upon what may be performed.

Claim 10.1.2. (Inclusion of the attending party). *Those attending a musical practice belong to its relational field where their presence or attention bears upon what the performing parties do, and their*

inclusion is established by the alteration that follows upon its absence.

The claim is stated here because it governs Part VI, and its ground is the requirement of dependence fixed in Chapter 3. Attendance that bears upon nothing constitutes no relation within the sense used here.

10.2 The Description of a Field

This section states what a description comprises. Its objective is to fix the headings under which fields are described throughout the book, so that descriptions of different practices may be compared.

A description of a musical relational field comprises five headings.

The *material and spatial provision* records the sounding bodies, their properties in the sense of Chapter 9, and the setting.

The *positional structure* records the parties, the positions differentiated among them, and the criteria of eligibility attaching to each.

The *temporal organisation* records whether the field is referenced or unreferenced in the sense of Chapter 6, the means of coordination employed, and the measures of Section 6.5.

The *textural organisation* records the degree of differentiation among simultaneously delivering parties in the terms of Chapter 7, and the treatment of simultaneous relation in the terms of Chapter 8.

The *institutional and articulated context* records the institutions bearing upon the practice and the accounts its participants give of it.

The five headings correspond to the levels of Chapter 3 and are the descriptive form in which Part III's eleven-heading template and Part IV's eight-heading template are both cast.

10.3 Admitted and Excluded Configurations

This section fixes a term used throughout Part IV. Its objective is to distinguish the configurations a field admits from those it excludes, and to state what such a distinction requires. It proceeds by defining the terms, giving the sources of exclusion, and recording the limit of the notion.

Definition 10.3.1. (Admitted configuration). *A configuration of parties, material and relations is admitted by a field where the field's material provision, positional structure and institutional context permit it to be realised.*

Definition 10.3.2. (Excluded configuration). *A configuration is excluded by a field where some constituent of the field prevents its realisation, and the constituent responsible is identified.*

Exclusion arises from four sources. *Material exclusion* arises where no available sounding body can execute the required material. *Positional exclusion* arises where the practice's assign-

ment of positions permits no party to occupy the required one. *Institutional exclusion* arises where the provisioning or regulation of the practice prevents the assembly of the required resources. *Normative exclusion* arises where a rule of the practice forbids the configuration.

Requirement 10.3.3. (Identification of the excluding constituent). *A claim that a field excludes a configuration identifies the constituent responsible for the exclusion, and a claim that a field admits a configuration identifies the constituents that would have to change for the admission to lapse.*

The requirement supplies the form in which the historical question of Part IV is answered. That question concerns the conditions under which particular relational architectures became available, and an answer states which constituent changed and which configuration thereby passed from excluded to admitted.

The limit of the notion is recorded. Admission is not adoption. A field may admit a configuration that no practice within it realises, and Part IV accordingly separates the question of what became available from the question of what was taken up.

10.4 Conventions of Reference and Terminology

This section records the conventions observed in the book. Its objective is to state them once so that they need not be restated.

Terms belonging to a particular tradition are given in romanised form, italicised at first appearance, with a gloss and the original orthography supplied once; the romanised form is used thereafter, and a glossary appears in the back matter.

Where a tradition's own term and the analytic term of this book both apply, both are given at the first point of contact and the divergence is recorded, in accordance with the finding of Chapter 22.

Historical statements are marked as attested, reconstructed or inferred, in the sense fixed in Chapter 13, and statements drawn from documentation carry the date of the documentation.

Propositions are stated as definitions, claims, hypotheses or requirements, in the sense fixed in Chapter 5.

Measures are stated with the body of material to which they apply and the mode of documentation from which they were taken, in accordance with Requirement 6.5.

10.5 The Position of the Formal Apparatus

This section states the relation between the descriptive apparatus of this Part and the formal apparatus of Part VIII. Its objective is to state what the formal apparatus adds and why it is placed last.

The apparatus of Parts I and II is descriptive: it supplies terms in which fields are described and compared. The apparatus of Part VIII is formal: it supplies structures in which certain of the questions raised by those descriptions may be posed precisely.

Three such questions are identified here and are carried to Part VIII. The distinction between referenced and unreferenced fields fixed in Chapter 6 requires an account of description without a reference, treated there under background dependence. The relation between a fixed layer and its variable realisations, established as a recurrent structure in Part III, requires an account of the range of realisations a fixed layer admits. And the question of identifiability fixed in Chapter 4 requires an account of the conditions under which a realisation determines what produced it.

Part VIII is placed last because its objects are supplied by the descriptions of Parts III to VII, and a formal apparatus stated in advance of them would fix its structures before the material had shown which structures were required.

10.6 Summary of Results

This chapter has established the following. A musical relational field comprises the parties, the material and spatial provision, the relations of dependence and the temporal extent, with attending parties included where their presence bears upon what performers do. A description of such a field comprises five headings, corresponding to the levels of Chapter 3, in which the templates of Parts III and IV are both cast. Configurations are admitted or excluded by a field, exclusion arising from material, positional, institutional or normative sources, and a claim of exclusion identifies the constituent responsible; admission is distinguished from adoption. The conventions of romanisation, of terminological divergence, of historical marking, of propositional standing and of measurement are recorded. The formal apparatus is placed last because its objects are supplied by the descriptions preceding it, and three questions are identified for it.

Part III

The Emergence of Musical Relations in Ritual Fields

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Chapter 11

The Evidentiary Standing of Ritual in the Study of Musical Relations

This chapter opens the empirical portion of the book. Its role is to justify the decision to begin the study of musical relations with ritual music, ahead of the historical trajectories treated in Part IV. It undertakes to establish three things: that the general question of the book confronts, in ordinary music history, an evidentiary gap of a specific kind; that ritual traditions supply observables which close part of that gap; and that the priority accorded to ritual here is methodological, carrying no claim that ritual is the origin of music or its most important form. It proceeds in five sections. Section 11.1 states the evidentiary gap. Section 11.2 sets out the additional observables that ritual traditions supply. Section 11.3 distinguishes three layers of ritual evidence which diverge from one another and which must therefore be handled separately. Section 11.4 states the feature of religious traditions that makes them informative for a relational account, namely that they articulate their own relational commitments. Section 11.5 fixes the standing of ritual within the book as an entry point, and states what follows from that limitation.

11.1 The Underdetermination of Relational Reconstruction in Ordinary Music History

This section states the evidentiary problem that governs the design of the book. Its objective is to show that the question posed in Part I, concerning the relation between a musical configuration and the relational world in which it arose, is underdetermined by the evidence normally available to music history. The section proceeds by stating the question in the form that requires evidence, identifying the kind of evidence that would settle it, and showing that this kind of evidence is systematically scarce for the periods and repertoires that music history treats.

The question at issue may be put as follows. A musical configuration exhibits an internal organisation of difference, coordination, anticipation and response. The hypothesis under examination holds that some of the relations obtaining among the people who made and used that music enter into that internal organisation. To examine the hypothesis, an investigator requires two independent descriptions: a description of the musical organisation, and a description of the relational world, each obtained without reliance on the other.

The first description is often available. Notation, instruments, treatises, iconography and, for recent periods, recordings supply access to musical organisation of varying completeness. The second description is the difficulty. To know how the participants in a musical practice understood their relations to one another, to their environment, to their dead and to whatever they held to exceed them, an investigator requires sources in which those understandings are set down. For most musical practices in most periods, such sources were never produced. A dance tune played at a harvest gathering in a European village in the fourteenth century leaves no document in which the participants state what they took their obligations to one another to be.

The consequence is a specific form of circularity, and it is worth stating plainly because it disqualifies a certain kind of argument that appears frequently in the literature. Where the relational description is unavailable independently, an investigator is tempted to derive it from the music and then to present the music as evidence for it. The procedure has the form of an inference and the content of a restatement.

Claim 11.1.1. (Circularity of unsupported relational reading). *Where the relational configuration of a community is reconstructed from its musical organisation, that musical organisation supplies no independent evidence for the reconstruction, and any correspondence between the two is a property of the procedure.*

The claim is not an objection to relational readings of music. It fixes the condition under which such a reading carries evidential weight, namely that the relational description be obtainable from sources independent of the musical one.¹ Part IV of this book treats periods for which that condition is partially satisfied, through institutional records, legal instruments, contracts, correspondence and the administrative documentation of musical establishments. Part III treats the case in which the condition is satisfied most fully.

11.2 The Additional Observables Supplied by Ritual Traditions

This section identifies what ritual traditions supply that closes part of the gap stated in Section 11.1. Its objective is to specify the classes of evidence available in ritual settings, and to state what each class can and cannot support. The section proceeds by enumerating five classes of source and attaching to each an indication of its evidential reach.

Ritual traditions are, characteristically, traditions that write down what they are doing. The writing serves the tradition's own purposes, which include transmission, correctness, adjudication of disputed practice, and the training of specialists. For the present investiga-

¹The comparative study of ritual as a field is surveyed in Catherine Bell, *Ritual: Perspectives and Dimensions* (New York: Oxford University Press, 1997); the formal properties of ritual on which this Part relies are set out in Roy A. Rappaport, *Ritual and Religion in the Making of Humanity* (Cambridge: Cambridge University Press, 1999), and the account of ritualisation as a mode of practice in Bell, *Ritual Theory, Ritual Practice* (New York: Oxford University Press, 1992). On the relation between music and altered states, and against any universal neurophysiological account of it, see Gilbert Rouget, *Music and Trance: A Theory of the Relations Between Music and Possession* (Chicago: University of Chicago Press, 1985), with the subsequent treatment in Judith Becker, *Deep Listeners: Music, Emotion, and Trancing* (Bloomington: Indiana University Press, 2004).

tion the significance of this material is that it supplies a description of the relational world produced by the participants themselves, for reasons unconnected with any question about music.

The five classes are these. *Scriptural and liturgical texts* supply the verbal content that is sung, chanted or recited, and in many traditions also the doctrinal statement of the relations the rite addresses. *Ritual manuals and rubrics* supply the prescribed sequence of action, including the specification of who acts, at what point, with which implement. *Commentaries and treatises* supply the tradition's own reflection on its practice, including, in several of the traditions treated in this Part, explicit theories of vocal production, of notation and of the proper relation between text and melody. *Administrative and institutional records* supply the material conditions of performance: appointments, provisioning, the cost and custody of instruments, the organisation of training. *Documentation of present practice*, including field recordings, transcriptions and ethnographic description, supplies access to sound.

The reach of the five classes differs, and the difference matters for every claim made in Chapters 14 to 24. The first four classes are period sources: they attest what was prescribed, recorded or argued at the date they were composed. They do not attest sound. A rubric specifying that a bell is struck at a given point in a rite establishes that the striking was prescribed; it leaves open how the striking was executed, at what tempo, with what relation to the voices. The fifth class attests sound, and attests it for the date of the documentation.

Requirement 11.2.1. (Separation of the source classes). *A statement about the sound of a ritual practice at a historical date requires a source that attests sound at that date; a prescriptive source of that date attests the prescription, and documentation of present practice attests the present.*

The requirement is restrictive, and it is meant to be. Its effect on this Part is that claims about the historical development of ritual sound are made sparingly and are marked as reconstructions where they are made. Its compensating advantage is that the relational description, which is what the argument of this book requires, comes from the first four classes, where the evidence is strongest.

11.3 Divergence Among the Declared, the Prescribed and the Enacted

This section addresses a complication in the use of ritual sources. Its objective is to establish that the material described in Section 11.2 stratifies into three layers which regularly diverge, and to fix the treatment of that divergence in this book. The section proceeds by distinguishing the layers, giving the reason each may depart from the others, and stating the interpretive rule adopted here.

The three layers are the *declared*, comprising what a tradition states about the relations its rite addresses and about the conduct proper to it; the *prescribed*, comprising what its manuals and rubrics require to be done; and the *enacted*, comprising what participants are documented as doing. Divergence among the three is ordinary. A tradition may declare a relation of direct address between the worshipper and a transcendent addressee while prescribing a rite in

which a specialist alone performs the address. A manual may prescribe a sequence which documented practice compresses or elaborates. Regional practice may retain a form that the tradition's own normative literature has superseded.

The temptation, in each case, is to treat one layer as the truth of which the others are distortions. The practice of this book is different.

Claim 11.3.1. (Evidential independence of the three layers). *The declared, the prescribed and the enacted are three distinct classes of evidence about a tradition, each attesting its own object; a divergence among them is a finding about the tradition and supplies no ground for discounting any of the three.*

Divergence is, for the purposes of this book, informative in a specific way. Where a declared relational commitment fails to appear in prescription or in practice, that absence bears directly on the criterion of operation established in Chapter 4, under which a relation counts as musically embedded only where it governs what is actually done. A cosmological doctrine that leaves no trace in the conduct of the rite supplies no support for a claim of embedding, however elaborate its statement.

11.4 The Articulation of Relational Commitments in Religious Traditions

This section states the feature of religious traditions that makes them informative for the argument of this book. Its objective is to establish that such traditions characteristically articulate the relational commitments the rite enacts, and to identify the axes along which they do so. The section proceeds by naming the axes, giving for each the form the articulation typically takes, and noting the variation among traditions in which axes receive emphasis.

Religious traditions address, among other things, questions of the following form: what a community owes to its members and they to one another; how human beings stand to the living world around them; how they stand to their dead and to those who preceded them; and how they stand to whatever the tradition holds to exceed the human. They also address the temporal question of where a community came from, what it is now, and where it is going. Traditions differ profoundly in the answers they give and in the emphasis they place on each question. What they share, for present purposes, is that the questions are posed explicitly and the answers written down.

Four axes may accordingly be distinguished, and they organise the comparative reading in Chapter 25: the relation among human persons; the relation between human persons and the non-human world; the relation between the living and the dead or the ancestral; and the relation between human persons and a transcendent addressee, where a tradition posits one. The fourth axis requires immediate qualification. Traditions differ over whether such an addressee exists, over its character, and over whether the category is appropriate at all; several of the traditions treated in this Part are not theistic in the sense the term carries in others. The axis is retained as an analytic heading covering whatever a tradition holds to exceed the individual human subject, with the content supplied by the tradition in each case.

Claim 11.4.1. (Availability of the relational description in ritual settings). *In traditions that maintain a normative literature, a description of the community's relational commitments is obtainable from sources composed for the tradition's own purposes, and therefore independently of the musical evidence.*

The independence stated in the claim is what makes the ritual cases usable as evidence in the sense required by Section 11.1. It is also the reason this Part precedes Part IV.

11.5 The Standing of Ritual as an Entry Point in This Book

This section fixes the position ritual occupies in the argument. Its objective is to state what the priority accorded to ritual does and does not assert, and to identify what is carried forward from this Part into the historical chapters. The section proceeds by distinguishing the methodological claim made here from three stronger claims that are declined, and by naming the results this Part is required to deliver.

The claim made here is that ritual settings supply, for the purposes of the present investigation, a favourable evidentiary situation. Three stronger claims are available in the literature and none of them is asserted in this book.

The first is that music originates in ritual. The question of musical origins belongs to a literature in evolutionary anthropology and archaeology which is treated separately in Chapter 25 where it bears on the discussion of recurrent forms, and the position taken there is agnostic. Nothing in the design of this Part depends on an answer.

The second is that ritual music is more fundamental, more authentic or more richly relational than secular music. The comparative discipline maintained throughout the book forbids the ranking, and Chapter 12 establishes a result which tells directly against it: a ritual field of great relational complexity may carry a musical subsystem of minimal elaboration.

The third is that the findings of this Part transfer automatically to the historical material of Part IV. The transfer is a matter for argument, and Chapter 4 supplies the criterion that governs it.

What this Part is required to deliver is stated here so that its chapters may be assessed against it. It is required to supply, first, a demonstration that relational commitments identified independently of the music do or do not govern musical practice in specified cases; second, at least one comparison in which the verbal content of a rite is held constant while its musical realisation varies, so that the variation may be attributed; and third, a specification of the mechanisms by which a musical form comes to be the form it is in a given place. The first is distributed across Chapters 14 to 24; the second is assembled in Chapter 26; the third is the subject of Chapter 25.

11.6 Summary of Results

This chapter has established the following. The relational reading of a musical configuration requires a description of the relational world obtained independently of the music, and for most of the material treated by music history that description is unavailable, with the consequence that unsupported relational readings are circular in a specifiable way. Ritual traditions supply five classes of source, of which four are period sources attesting prescription, doctrine, reflection and material provision, and one attests sound at the date of its documentation; claims about historical sound require the fifth class and are therefore marked as reconstructions where the fifth class is unavailable. Ritual evidence stratifies into the declared, the prescribed and the enacted, which regularly diverge, and the divergence is treated here as a finding about the tradition. Religious traditions articulate relational commitments along four axes, and the articulation is produced for the tradition's own purposes, which supplies the independence the argument requires. The priority accorded to ritual in this book is methodological; the claims that music originates in ritual, that ritual music is more richly relational than secular music, and that findings transfer automatically to the historical chapters, are all declined.

Chapter 12

The Boundary Between Ritual Elaboration and Musical Elaboration

This chapter establishes a restriction on the central hypothesis of the book. Its role is to fix, before any case is examined, how large a claim the evidence of Part III is permitted to support. It undertakes to establish four things: that ritual fields of substantial relational complexity occur with musical subsystems of minimal elaboration; that this occurrence functions as a negative control on the hypothesis; that the hypothesis survives in a restricted form which is stated here; and that the restricted form determines which ritual occasions the following chapters must examine. It proceeds in five sections. Section 12.1 distinguishes ritual relational complexity from musical elaboration. Section 12.2 presents the minimal case. Section 12.3 states the containment of the musical subsystem within the ritual field. Section 12.4 identifies the occasions on which the musical subsystem is elaborated and states why the following chapters concentrate on them. Section 12.5 states the restricted hypothesis and what it forbids.

12.1 The Distinction Between Ritual Relational Complexity and Musical Elaboration

This section separates two properties that are frequently conflated. Its objective is to establish that the relational complexity of a ritual field and the elaboration of its musical subsystem vary independently, and to supply the measures by which each is assessed in this book. The section proceeds by defining each property, indicating how each is assessed from the sources set out in Chapter 11, and stating the independence.

Definition 12.1.1. (Relational complexity of a ritual field). *The relational complexity of a ritual field is the number of distinct relations the rite addresses, the number of parties holding differentiated positions within it, and the degree of interdependence among their actions.*

Definition 12.1.2. (Musical elaboration). *The musical elaboration of a ritual field is the extent of its sounding organisation, assessed by the number of simultaneously distinguishable sounding parts, the range of pitch and durational distinctions employed, and the extent to which the sounding material is fixed and transmitted as such.*

The two are assessed from different sources. Relational complexity is read from scripture, manual and commentary, which specify what the rite addresses and who holds which

position. Musical elaboration is read from documentation of sound, from notation where a tradition maintains it, and from prescriptions concerning instruments and vocal delivery.

The independence of the two properties is the substantive point of this section. A rite may address a dense array of relations, distributing differentiated roles among a hierarchy of specialists and a lay assembly, and sound almost nothing. A musical practice may deploy considerable sounding resources in the service of a simple relational structure. Neither property predicts the other.

12.2 The Minimal Case of Recitation with a Single Percussion Instrument

This section presents the case that governs the restriction developed in this chapter. Its objective is to exhibit a ritual field of substantial relational complexity whose musical subsystem is of minimal elaboration, and to establish what follows from the existence of such a case. The section proceeds by describing the practice, stating its relational content as the tradition itself states it, characterising its sounding organisation, and drawing the consequence.

Across Chinese Buddhist monastic practice, and in the Japanese and Korean traditions that inherit from it, the recitation of scripture may be performed with a sounding apparatus consisting of the voices of the assembly and a single struck idiophone, the *muyu* (木鱼, wooden fish), sometimes with the addition of a small bell. Recitation may also be performed without any instrument at all, as spoken delivery.¹ The practice attested in this minimal form is the daily office, performed morning and evening, and it is the ordinary case of Buddhist liturgical sound.

The relational content of the practice, as the tradition states it, is not minimal. The recitation situates the assembly with respect to a body of teaching held to have been transmitted across a lineage of many centuries; it constitutes the assembly as a collective party distinct from its individual members; it addresses the dead, through the dedication of merit, and thereby posits a relation between the living community and those who have preceded it; and it enacts a discipline of repetition through which the practitioner is understood to be transformed over time. The role of the *weinuo* (维那), the precentor who regulates the pacing of the liturgy, differentiates positions within the assembly.

The sounding organisation is minimal on each of the three measures of Definition 12.2. There is one sounding part in the sense that all voices deliver the same text together; pitch distinctions are few and durational distinctions are governed by the pulse of the struck instrument; and the sounding material is fixed chiefly through the fixity of the text.

Claim 12.2.1. (Independence of the ritual relation from musical elaboration). *A ritual field may address a dense array of relations while its musical subsystem exhibits minimal elaboration; the relations the rite enacts are therefore not constituted by the musical elaboration.*

¹Pi-yen Chen, ed., *Fanbai: Chinese Buddhist Monastic Chants*, Recent Researches in the Oral Traditions of Music 8 (Middleton, WI: A-R Editions, 2010), which supplies transcriptions of the morning and evening liturgy together with historical and analytical commentary. The practice is described there as occupying a position between speech and song.

The claim functions in this book as a negative control. Its effect is to remove from consideration a strong version of the hypothesis under which musical organisation is what establishes the relational field of a rite. That version is refuted by a case that the traditions themselves treat as unremarkable.

12.3 The Containment of the Musical Subsystem Within the Ritual Field

This section states the structural relation between the two properties distinguished in Section 12.1. Its objective is to establish that the musical subsystem of a rite is properly contained within the ritual field, and to identify the variable that the following chapters investigate. The section proceeds by stating the containment, giving its consequence for the direction of inference, and naming the variable.

The relation established by Section 12.2 is one of containment. A ritual field comprises the actions, positions, implements, spaces and temporal divisions through which a rite is conducted. Some of those actions are sounding actions, and their organisation constitutes the musical subsystem. The subsystem is a proper part: rites occur whose sounding component approaches the lower limit, and no rite consists of its sounding component alone.

The consequence for inference is direct. An investigator observing that a rite enacts a given relation may not conclude that the music of the rite carries that relation, since the relation may be carried by the non-sounding portion of the field. The converse inference is likewise blocked: an investigator observing an elaborate musical organisation may not conclude that the elaboration corresponds to relational content, since the elaboration may answer to conditions of a different kind, including the availability of trained personnel and the resources of a patron.

The variable the following chapters investigate is therefore the degree of musical elaboration itself, treated as something to be explained. The question it poses is under what conditions the sounding portion of a ritual field is elaborated, and what, if anything, the elaboration then carries that the remainder of the field does not.

12.4 Occasions of Elaborated Sounding Organisation and Their Selection for Study

This section identifies the occasions on which the musical subsystem of a ritual field is elaborated, and states why the following chapters concentrate their musical analysis on them. Its objective is to make the selection explicit and to record the distortion the selection introduces. The section proceeds by characterising the occasions, giving examples from the traditions treated in this Part, stating the analytical reason for the concentration, and recording the correction that the minimal case supplies.

The occasions on which a ritual field elaborates its sounding organisation share features across traditions. They are periodic and infrequent, occurring at intervals of a year or longer; they assemble a larger body of participants than ordinary practice, often including lay par-

ticipants alongside specialists; they extend over longer durations, in several traditions over multiple days; and they deploy sounding resources that ordinary practice omits, including instrumental ensembles and differentiated vocal parts.

Examples from the traditions treated in this Part include the Daoist offering rites discussed in Chapter 14; the Buddhist Water and Land assembly, a multi-day rite of deliverance whose textual history is traceable to the Tang period and which received substantial editing in the Song and again in the Ming, discussed in Chapter 15;² the monastic ritual cycles of the Tibetan traditions treated in Chapter 17; and the annual and calendrical shrine performances treated in Chapter 18.

The analytical reason for concentrating on these occasions is that the properties the book is concerned with become observable there. Simultaneity of differentiated parts, coordination among heterogeneous sounding agents, and extended temporal organisation require a field in which several parties sound at once over a long span. Where the sounding organisation approaches its lower limit, those properties have no instances.

The correction that the minimal case supplies is recorded here so that it governs the reading of the chapters that follow. Concentration on elaborated occasions selects the unrepresentative portion of each tradition's practice. The daily office is the ordinary case; the multi-day assembly is the exception. Claims resting on the elaborated occasions accordingly describe what a tradition does at its maximum, and generalisation from them to the tradition's ordinary practice is blocked.

12.5 The Restricted Hypothesis and Its Prohibitions

This section states the form in which the central hypothesis is carried into the following chapters. Its objective is to give the restricted hypothesis, to identify the two results that restrict it, and to state what the restriction forbids. The section proceeds by naming the two results, stating the hypothesis in restricted form, and enumerating the prohibitions.

Two results restrict the hypothesis. The first is established in Section 12.2: a ritual field may enact a dense array of relations with a musical subsystem of minimal elaboration, so that musical elaboration is dispensable for the enactment of the relation. The second is established in Chapter 14 and assembled in Chapter 26: a single verbal text, whose doctrinal content is fixed, receives materially different musical realisations across lineages and localities, so that the musical realisation is underdetermined by the relation as the tradition declares it.

Hypothesis 12.5.1. (Restricted embedding). *Where the sounding portion of a ritual field is elaborated, its organisation carries relational information which the verbal and prescriptive portions of the field leave unspecified.*

²On the textual history of the rite and its relation to visual programmes, see Daniel B. Stevenson, "Text, Image, and Transformation in the History of the Shuilu fahui, the Buddhist Rite for Deliverance of Creatures of Water and Land," in Marsha Weidner, ed., *Cultural Intersections in Later Chinese Buddhism* (Honolulu: University of Hawaii Press, 2001). The traditional attribution of the rite's origin to the reign of Emperor Wu of Liang is a tradition-internal ascription and is reported as such.

The hypothesis so stated is weaker than the versions found in the relational musicological literature surveyed in Chapter 2, and the weakening is the result of the two findings above. Its content is nonetheless substantive: it asserts that the elaborated musical subsystem is informative, and it locates the information precisely, in the difference between what the music specifies and what the text and rubric specify. It is refuted where the elaborated musical organisation of a rite is shown to be fully determined by its text and prescriptions together with the material conditions of performance.

Three prohibitions follow, and they govern every chapter of this Part. A claim that the music of a rite constitutes the relation the rite enacts is forbidden, by the first result. A claim that the musical realisation of a rite may be predicted from the doctrinal commitments of the tradition is forbidden, by the second. A claim that a tradition with a less elaborated musical subsystem enacts a less complex relational field is forbidden, by Definition 12.1 and Definition 12.2 together with the independence established in Section 12.1.

12.6 Summary of Results

This chapter has established the following. The relational complexity of a ritual field and the elaboration of its musical subsystem are distinct properties, assessed from different sources, and they vary independently. The daily recitation practice of Chinese Buddhist monastic communities, performed with the voice and a single struck idiophone or with no instrument at all, exhibits a dense relational content with a sounding organisation at its lower limit; the case functions as a negative control and refutes the version of the hypothesis on which musical organisation constitutes the relational field. The musical subsystem is properly contained within the ritual field, which blocks inference in both directions between relational content and musical elaboration and makes the degree of elaboration itself the variable to be explained. The chapters that follow concentrate their musical analysis on elaborated occasions, which are periodic, assembled, extended and instrumentally resourced; the concentration selects the unrepresentative portion of each tradition's practice, and generalisation from it to ordinary practice is blocked. The hypothesis carried forward is restricted to the claim that an elaborated sounding organisation carries relational information left unspecified by the verbal and prescriptive portions of the field, and three prohibitions follow from the restriction.

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Chapter 13

Method and Template for the Reconstruction of Ritual Fields

This chapter fixes the procedure followed in Chapters 14 to 24. Its role is to make the treatment of eleven traditions comparable, so that the comparative reading of Chapter 25 operates on descriptions of a common shape. It undertakes to establish four things: a marking discipline for the epistemic status of every historical statement; a treatment of the problem that living traditions have recent histories which their own accounts may not foreground; the restrictions that traditions place on the transmission of their material and the obligations those restrictions impose on this book; and the template that each of the eleven chapters follows. It proceeds in five sections. Section 13.1 states the marking discipline. Section 13.2 treats the problem of the documented present. Section 13.3 states the restrictions and obligations. Section 13.4 states the principle by which the eleven traditions were selected and records what the selection omits. Section 13.5 gives the template.

13.1 The Marking of Epistemic Status in Historical Statements

This section states the first of the book's three historical disciplines as it applies to Part III. Its objective is to fix three categories of historical statement and to require that every such statement be formulated so that its category is evident. The section proceeds by defining the categories, giving an illustration of each drawn from material treated later in this Part, and stating the rule.

Definition 13.1.1. (Attested statement). *A statement is attested where a source composed at or near the date to which the statement refers records the matter stated.*

Definition 13.1.2. (Reconstructed statement). *A statement is reconstructed where it is derived by scholarly argument from surviving material of the relevant date, without a source that records the matter directly.*

Definition 13.1.3. (Inferred statement). *A statement is inferred where it is derived from documented present-day practice together with an assumption of continuity.*

An illustration of each may be drawn from the Daoist material of Chapter 14. That a body of chanted liturgical practice existed in a Daoist community of the fifth century is attested, in the sense that texts of that period refer to such practice. That the melodic organisation of that

practice resembled any documented present-day form is neither attested nor reconstructed; it is an inference from present practice under an assumption of continuity, and the assumption is precisely what a tradition's own lineage claims assert and what independent evidence does not establish. That certain percussion patterns organised the pacing of chanted recitation in a specified locality in a specified recent decade is attested by documentation of that decade.

Requirement 13.1.4. (Marking of status). *Every historical statement in this Part is formulated so that its status as attested, reconstructed or inferred is evident from the statement, and inferred statements name the assumption of continuity on which they depend.*

The requirement bears with particular weight on lineage claims. Traditions commonly assert descent of their present practice from a named founder or a datable moment. Such an assertion is itself attested, as an assertion, by the text that makes it. The matter asserted is a separate question. This book reports lineage claims as claims of the traditions that hold them, and treats the question of musical continuity as open wherever independent evidence is absent.

13.2 The Documented Present and the Recent History of Living Traditions

This section treats a difficulty specific to traditions that are currently practised. Its objective is to establish that documentation of a living tradition supplies evidence about the period of documentation, and to identify the recent processes that have reshaped the traditions treated in this Part. The section proceeds by stating the general point, enumerating four processes of recent reshaping, and giving the rule adopted.

Documentation of a living tradition is evidence of the state of that tradition at the date of documentation. The point is elementary and is stated because the contrary practice is common: a recording made in the late twentieth century is presented as access to a medieval or ancient practice, on the strength of the tradition's continuity claim.

Four processes have reshaped the traditions treated in this Part within the period from which most documentation derives, and each is discussed in the chapter it affects. The first is *institutional reconstitution*: traditions interrupted by war, dispersal or administrative suppression have been reassembled by surviving specialists, and the reassembly involves selection and reconstruction. The second is *standardisation through centralised training*, where a conservatory, a seminary or a central establishment propagates one variant of a practice at the expense of local variants. The third is *presentation outside the ritual setting*: several of the traditions here have been performed in concert halls and issued as recordings, beginning in the second half of the twentieth century, and the concert setting imposes its own requirements of duration, framing and audibility.¹ The fourth is *heritage designation*, under national and international instruments, which attaches administrative categories, funding and criteria of authenticity to practices that previously carried none.

¹The first public concert performance of Japanese Buddhist *shōmyō* is reported to have taken place at the National Theatre in Tokyo in 1966, and to have been opposed by conservative opinion within the tradition at the time. Details are on the verification list for Chapter 16.

Requirement 13.2.1. (Dating of documentation). *Where a practice is described from documentation, the date of the documentation is given, and a claim that the documented practice obtained at an earlier date is marked as inferred and its assumption of continuity named.*

13.3 Restrictions Maintained by Traditions and the Obligations They Impose

This section states the obligations that arise from the traditions' own restrictions on their material. Its objective is to identify the classes of restriction encountered in this Part and to state the practice this book adopts in respect of each. The section proceeds by naming the classes, giving instances, and stating the practice.

Several of the traditions treated here restrict access to portions of their musical material. Four classes of restriction may be distinguished. The first is *restriction of audition*, where a repertoire may be heard only by specified persons or on specified occasions. The second is *restriction of transmission*, where material is transmitted by oral instruction from teacher to pupil and written or recorded forms are held to be inadequate or improper substitutes. The third is *ownership*, where the right to perform a given item is held by a person, family or house, and performance by others constitutes an offence recognised by the community. The fourth is *restriction of documentation*, where recording is disallowed.

Instances arise across the Part. Certain Japanese court and shrine repertoires are designated as restricted by the institutions that maintain them. Japanese Buddhist chant traditions transmit their substance through oral instruction, with notation serving as an aid to a transmission held to require the teacher's presence. Orthodox transmission of Vedic recitation is restricted by lineage and by other criteria internal to the tradition. Song ownership is a settled principle in a number of Indigenous traditions, and the literature on repatriation of recorded material treats the consequences at length.²

Requirement 13.3.1. (Observance of restrictions). *Material that the source community designates as restricted is not reproduced, transcribed or analysed in this book, and the existence of the restriction is reported as the description of that portion of the tradition; where a recording of restricted material exists and is technically accessible, its accessibility is treated as supplying no permission.*

The requirement has a cost, and the cost is recorded. Chapters affected by it describe their traditions less completely than chapters where no restriction applies, and the comparative reading of Chapter 25 is correspondingly uneven. The alternative, of treating availability as permission, is declined.

²On repatriation of recorded Indigenous music and the questions of ownership and consent it raises, see Trevor Reed, "Reclaiming Ownership of the Indigenous Voice: The Hopi Music Repatriation Project," in Frank Gunderson, Robert C. Lancefield and Bret Woods, eds., *The Oxford Handbook of Musical Repatriation* (New York: Oxford University Press, 2019).

13.4 The Principle of Selection Among Traditions and Its Omissions

This section states why the eleven traditions of this Part were selected. Its objective is to make the selection principle explicit and to record what it omits, so that the comparative claims of Chapter 25 may be assessed against the sample from which they are drawn. The section proceeds by stating the principle, identifying the four properties along which the sample was constructed to vary, and recording the omissions.

The selection principle is variation along properties that bear on the hypothesis of Chapter 12, together with the availability of a normative literature in the sense of Chapter 11. A sample assembled to represent the world's religious traditions proportionally would serve a different purpose.

Four properties of variation govern the sample. The first is the presence or absence of instruments, and where they are absent, whether the absence follows from a normative prohibition; the Eastern Christian and Jewish cases supply instances of principled restriction, and the Tibetan and Daoist cases supply instances of extensive instrumental deployment. The second is the fixity of the verbal text and the availability of a notational system for its melodic realisation; the Jewish case supplies a notational system whose realisations diverge across communities, and the Japanese Buddhist case supplies a notation held to be insufficient without oral transmission. The third is the relation of the musical practice to a language boundary; the Chinese and Japanese Buddhist cases supply a single textual tradition realised in two languages. The fourth is the tradition's own classification of its sounding practice, which in several cases withholds the category of music from it; the Qur'anic case is treated in Chapter 22 on the tradition's own terms.

The omissions are substantial and are named here. African traditional religions, Latin American syncretic traditions, Sikh, Jain, Bahá'í, Zoroastrian and Baltic and Slavic reconstructionist traditions are absent, as are the great majority of Christian denominational traditions beyond the two treated. The absence of a tradition from the sample carries no implication about it, and the comparative results of Chapter 25 are stated as results about this sample.

13.5 The Template Followed by the Tradition Chapters

This section gives the template that Chapters 14 to 24 follow. Its objective is to fix a common order of exposition so that corresponding material occupies corresponding positions across the eleven chapters. The section proceeds by giving the eleven headings of the template with the content each comprises, and by stating the two circumstances under which a chapter departs from it.

The template is as follows.

1. **The field in outline and its sources.** The rite or family of rites treated, its geographical and institutional extent, the principal scholarly literature, and the dates of the documentation relied upon.

2. **The textual and normative layer.** The scriptural, liturgical and prescriptive texts, their dates so far as these are established, and the tradition's own commentarial reflection on its sounding practice.
3. **Material provision.** Instruments, their materials and construction, the substances employed in the rite, and the spatial and acoustic setting.
4. **Bodily practice.** Vocal production, breath, posture, movement, and the training through which these are acquired.
5. **Temporal organisation.** Metered and unmetered organisation, the pacing instruments where present, the internal division of the rite into stages, and the calendrical placement of occasions.
6. **Social organisation and the division of ritual labour.** The differentiated positions within the rite, the criteria of eligibility for each, lineage structure, and the mode of transmission.
7. **The relations enacted.** The tradition's articulation of its commitments along the four axes of Chapter 11, reported in the tradition's own terms.
8. **Degree of musical elaboration.** The range from ordinary to elaborated occasions, assessed on the measures of Definition 12.2.
9. **The relational architecture and the operation of relations within it.** The application of the criterion of Chapter 4, distinguishing relations that govern the conduct of the rite from relations that govern its internal sounding organisation.
10. **Variation.** Divergence by locality, by lineage and across documented periods, with the mechanisms proposed for each.
11. **Results and their limits.** What the case establishes, and what it leaves undetermined.

Two circumstances warrant departure from the template. Where a tradition maintains a restriction of the kind stated in Section 13.3, the heading affected records the restriction as the content of that heading. Where the scholarly literature on a tradition supplies no evidence bearing on a heading, the heading records the absence and states what evidence would be required.

13.6 Summary of Results

This chapter has established the following. Every historical statement in this Part is marked as attested, reconstructed or inferred, with inferred statements naming the assumption of continuity on which they rest, and lineage claims reported as claims of the traditions that hold them. Documentation of a living tradition supplies evidence about the date of documentation, and four processes of recent reshaping bear on the traditions treated here: institutional reconstitution, standardisation through centralised training, presentation outside the ritual

setting, and heritage designation. Traditions maintain restrictions of audition, of transmission, of ownership and of documentation; restricted material is not reproduced or analysed here, technical accessibility supplies no permission, and the resulting unevenness of the comparative reading is recorded as a cost. The eleven traditions were selected for variation along four properties bearing on the hypothesis, together with the availability of a normative literature; the omissions are substantial and are named, and the comparative results are stated as results about this sample. The eleven tradition chapters follow a common template of eleven headings, with two specified circumstances warranting departure.

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Chapter 14

Daoist Ritual Sound and the Divergence of Liturgical *Yun*

This chapter is the first of the eleven tradition chapters and carries the case on which the central comparison of Part III rests. Its role is to exhibit a tradition in which a fixed liturgical text receives materially different sounding realisations across lineages and localities, so that the variation may be examined against candidate mechanisms. It undertakes to establish four things: that the divergence of realisation is documented and is not an artefact of the documentation; that the doctrinal content of the texts so realised is held constant across the diverging realisations; that the divergence is therefore unexplained by doctrine; and that three candidate mechanisms are separable in this case and may be assessed against evidence. It follows the template of Chapter 13 in its eleven headings.

14.1 The Field in Outline and Its Sources

This section identifies the material treated in the chapter and the literature on which the treatment relies. Its objective is to fix the geographical and institutional extent of the case and to date the documentation. It proceeds by naming the ritual family, identifying the ordination traditions concerned, and listing the principal scholarship with the dates of the fieldwork on which it rests.

The material treated here is the sounding practice of Daoist communal ritual, principally within the *Quanzhen* (全真, Complete Perfection) ordination tradition, and principally as documented in mainland Chinese and Hong Kong communities from the 1980s onward. The ritual family is that of *zhai* (齋, retreat or fast) and *jiao* (醮, offering), which together comprise the communal rites through which Daoist priests conduct petitions, offerings and rites of deliverance.

The principal musicological literature is that established by Tsao Pen-yeh (曹本冶), whose study of the Hong Kong Yulan penhui rite and whose edited volume of studies of contemporary Daoist ritual and music, both of 1989, opened the field in English and Chinese together.¹ For the Wudang material the principal study is that of Tsao and Pu Hengqiang (蒲亨强) of

¹Tsao Pen-yeh, *Taoist Ritual Music of the Yu-lan Pen-hui (Feeding the Hungry Ghost Festival) in a Hong Kong Taoist Temple* (Hong Kong, 1989); Tsao Pen-yeh and Daniel P. L. Law, eds., *Studies of Taoist Rituals and Music of Today* (Hong Kong: The Society for Ethnomusicological Research in Hong Kong, 1989). The author's name also appears as Cao Benye and as Tsao Poon-yee; the romanisation used in each publication is retained in citation.

1993, preceded by Pu's article of 1987 and accompanied by Liu Hong's article on the Wudang *yun* of 1990.² A notated collection of the standardised Quanzhen liturgical style was published by Shi Xinmin in 1991.³ Two general collections assemble regional material.⁴

The study of Daoist ritual apart from its music supplies the framework within which the sounding material is placed. Three bodies of work are drawn upon: that of John Lagerwey, whose 1987 study proceeded from extended fieldwork with a single Taiwanese priest;⁵ that of Kristofer Schipper, whose account of the Daoist body and whose historical companion to the canon, the latter edited with Franciscus Verellen, supply the textual and institutional frame;⁶ and that of Kenneth Dean on the ritual traditions of southeastern China.⁷ Notation within the canon and its relation to present performance is treated by Judith Boltz.⁸

The date of the documentation governs the reading of this chapter. The musicological literature named above rests on fieldwork conducted from the late 1970s onward, in the period following the resumption of open religious practice in mainland China. Claims made here about sounding practice are claims about the documented period, and their extension backward is marked where it is attempted.

14.2 The Textual and Normative Layer

This section identifies the texts that the sounding practice realises and the tradition's own regulation of that realisation. Its objective is to establish that the verbal content is fixed and transmitted in written form, which is the condition required for the comparison developed in Section 14.10. It proceeds by identifying the classes of text, indicating their transmission, and noting the limits of the tradition's own notation.

The verbal material of Daoist communal ritual comprises scriptures (*jing*, 经) together with the liturgical compilations that arrange them for use, and the ritual manuals (*keyi ben*, 科仪本) that prescribe the sequence of a rite. The Daoist canon transmits these in written form, and the historical companion edited by Schipper and Verellen supplies the description of the corpus. That the verbal content is fixed and written is attested by the manuscripts and printed editions themselves.

The tradition's regulation of sounding realisation is of a different order. Notation appears

²Tsao Pen-yeh and Pu Hengqiang, *Wudangshan dao jiao yinyue yanjiu* (Taipei: Taiwan Shangwu Yinshuguan, 1993); Pu Hengqiang, "Wudangshan Daojiao yinyue chutan," *Yinyue yishu* 3 (1987): 17–31; Liu Hong, "Shilun Wudangyun," *Huangzhong* 1 (1990): 1–8.

³Shi Xinmin, *Quanzhen zhengyun puji* (Beijing: Zhongguo wenlian chubanshe, 1991).

⁴Wang Chunwu and Gan Shaocheng, eds., *Zhongguo dao jiao yinyue* (Chengdu: Xinan jiaotong daxue chubanshe, 1993); Tian Qing, ed., *Zhongguo zongjiao yinyue* (Beijing: Zongjiao wenhua chubanshe, 1997).

⁵John Lagerwey, *Taoist Ritual in Chinese Society and History* (New York: Macmillan, 1987).

⁶Kristofer Schipper, *The Taoist Body*, trans. Karen C. Duval (Berkeley: University of California Press, 1993), originally published as *Le corps taoïste* (Paris: Fayard, 1982); Kristofer Schipper and Franciscus Verellen, eds., *The Taoist Canon: A Historical Companion to the Daozang* (Chicago: University of Chicago Press, 2004).

⁷Kenneth Dean, *Taoist Ritual and Popular Cults of Southeast China* (Princeton: Princeton University Press, 1993); "Two Taoist jiao observed in Zhangzhou," *Cahiers d'Extrême-Asie* 2 (1986): 191–209; "Funerals in Fujian," *Cahiers d'Extrême-Asie* 4 (1988): 19–78.

⁸Judith M. Boltz, "Neumatic Notation in the Taoist Canon and Performance Practice Today," in Tsao and Law, eds., *Studies of Taoist Rituals and Music of Today*, 88–109.

in the canon, and Boltz's study establishes both its presence and the difficulty of relating it to present performance. Contemporary transmission of melodic realisation proceeds chiefly by oral instruction and participation, with notated collections such as Shi Xinmin's serving as records of a realisation and as instruments of its propagation.

Claim 14.2.1. (Asymmetry of textual and melodic fixity in Daoist liturgy). *The verbal content of Daoist communal liturgy is transmitted in written form and is fixed across the communities documented, while its melodic realisation is transmitted principally by oral instruction and varies across those communities.*

The asymmetry is the structural feature on which this chapter turns. It supplies a case in which one layer of a practice is held constant by the tradition's own means of transmission while another layer varies.

14.3 Material Provision

This section describes the sounding implements of the rite and their setting. Its objective is to identify the material resources on which the sounding organisation depends, since material availability is one of the candidate mechanisms assessed in Section 14.10. It proceeds by distinguishing two classes of implement, describing each, and characterising the spatial setting.

The implements divide into ritual instruments (*faqi*, 法器) and melodic instruments. The ritual instruments comprise struck idiophones and membranophones: a hand bell, a bowl-shaped struck idiophone (*qing*, 磬), a small struck cup or gong (*dang*, 钲), a wooden slit drum (*muyu*, 木鱼) and drums. They are handled by the officiating personnel and their sounding is prescribed at specified points of the rite. The melodic instruments, where a community deploys them, comprise mouth organ (*sheng*, 笙), double reed (*guanzi*, 管子) and transverse flute (*dizi*, 笛子), among others, and are handled by musicians who may or may not be ordained.

The distinction between the two classes bears on the argument. The ritual instruments are constitutive of the rite in the sense that their sounding is prescribed by the manuals; the melodic instruments are deployed as resources permit. Communities documented in the 1980s differ substantially in the melodic resources available to them, and the difference tracks institutional scale and the availability of trained personnel.

The setting is the ritual hall or the temporary altar erected for a communal rite, with the altar space organised by orientation and by the placement of participants. The acoustic properties of these settings vary and have not, to the author's knowledge, been systematically studied for this tradition; the absence is recorded here as a gap.

14.4 Bodily Practice

This section describes the bodily dimension of Daoist ritual sounding. Its objective is to identify what a practitioner acquires through training, since acquisition by training is one of the candidate mechanisms of Section 14.10. It proceeds by treating vocal delivery, movement and the mode of acquisition.

Vocal delivery in Daoist liturgy encompasses a range from recitation, in which the text is delivered with minimal melodic differentiation, to sustained melodic chant, in which syllables are extended over long melismatic phrases. The tradition's own term for the melodic manner of a lineage, *yun* (韻), covers the whole complex of vocal delivery, melodic shape and pacing that a lineage transmits.

Movement is prescribed at points of the rite. The genre known as *buxu* (步虛, pacing the void) couples chanted delivery with prescribed circumambulation of the altar. The coupling is recorded here because it bears on the temporal organisation treated in the following section: where sounding is coordinated with movement, the pacing of the sounding is constrained by the pacing of the body.

Acquisition proceeds by participation. A novice acquires the *yun* of the community into which the novice is ordained, by joining in its performance under the supervision of senior practitioners. The written collection supplements this and, in the documented period, has also served to propagate one realisation into communities that previously used another; the propagation is treated in Section 14.10.

14.5 Temporal Organisation

This section describes the temporal organisation of Daoist ritual sounding. Its objective is to identify the mechanisms by which the sounding of an assembly is coordinated, and to establish the coexistence of metered and unmetered organisation within a single rite. It proceeds by treating the pacing instruments, the alternation of organisation types, and the staging of a communal rite.

Coordination of collective delivery is effected by the struck instruments. In the Hong Kong Quanzhen practice documented by Tsao, the *muyu* is sounded in coordination with a struck instrument handled by the chief cantor, and the pair regulates the pacing of collective scripture chanting.⁹ The arrangement places the temporal control of a collective sounding body in the hands of designated officiants.

Within a single rite, sections of metered organisation alternate with sections in which the sounding is governed by breath and phrase without a maintained pulse. The alternation is not incidental. Metered sections coincide with collective delivery by the assembly; unmetered sections coincide with solo delivery by the officiant. Coordination of many voices requires a pulse; delivery by one voice does not.

⁹Tsao, *Taoist Ritual Music of the Yu-lan Pen-hui*; the description is of practice documented in Hong Kong in the 1980s.

Claim 14.5.1. (Coordinative function of metrical organisation in collective delivery). *Within the rites documented, metered temporal organisation coincides with collective delivery and unmetered organisation with solo delivery, and the pacing instruments are handled by the officiants whose position within the rite is defined by the manuals.*

For the Wudang tradition, a fixed percussion pattern named the *Qixing ban* (七星板, seven-star board) is reported as organising the pacing of chanted sections.¹⁰

Staging of a communal rite proceeds through announced divisions, each with its prescribed actions, its officiating personnel and its sounding. Communal rites of deliverance may extend over several days.

14.6 Social Organisation and the Division of Ritual Labour

This section describes the differentiated positions within a Daoist communal rite. Its objective is to establish that the sounding organisation is distributed among defined positions whose criteria of eligibility are set by the tradition, and to identify the lineage structures through which the positions are filled. It proceeds by naming the positions, stating the eligibility criteria, and describing transmission.

Three positions recur in the literature on communal rites. The *gaogong* (高功, high officiant) conducts the central actions of the rite, including the presentation of petitions, and delivers the portions assigned to a single voice. The *dujiang* (都讲, cantor) leads collective delivery. The *biaobai* (表白) handles the presentation and reading of documents. Additional positions are named in particular traditions and rites.

Eligibility is fixed by ordination and by training. The positions carry differentiated competences, and the competence of the *gaogong* includes the internal practices which the tradition holds to be requisite for the efficacy of the rite. Schipper's account of the Daoist body treats these at length.

Transmission proceeds by lineage. A practitioner is ordained into a lineage, acquires its practice, and transmits it. The *yun* of a community is accordingly a lineage property in the tradition's own understanding, and this understanding is itself part of the evidence: the tradition treats the sounding manner as something inherited and identifiable.

14.7 The Relations Enacted

This section reports the relational commitments that Daoist communal ritual addresses, in the tradition's own terms. Its objective is to supply the relational description that Chapter 11 requires to be obtained independently of the musical evidence. It proceeds along the four axes fixed in that chapter.

¹⁰Reported in the Wudang literature cited above. The extent of its application across the repertoire and the period over which it has been in use are matters on which the present author has not been able to verify the secondary accounts; the item stands on the verification list.

Along the axis of relations among human persons, the rites constitute a community of participants on whose behalf the officiant acts, and differentiate that community internally by the positions described above. Communal offering rites are undertaken for a defined locality or association, and the definition of the beneficiary community is itself part of the ritual documentation.

Along the axis of relations to the non-human world, the tradition articulates a correspondence between the ordering of the human community, the ordering of the body, and the ordering of the cosmos. The correspondence is stated in the tradition's textual materials and is the subject of extensive scholarly treatment.

Along the axis of relations to the dead, rites of deliverance address those who have died, including those who died without descendants to attend to them. The rite treated in Tsao's 1989 study belongs to this class.

Along the fourth axis, the tradition articulates a relation of mediated address to a celestial administration conceived on a bureaucratic model, in which petitions are presented in documentary form by an officiant competent to present them. The bureaucratic character of the address is a settled finding of the scholarship and bears directly on the analysis of Section 14.9.

14.8 Degree of Musical Elaboration

This section places Daoist practice on the scale established in Chapter 12. Its objective is to establish that the tradition spans a wide range of elaboration and to identify where within that range the elaborated occasions fall. It proceeds by characterising the range and stating what varies across it.

At the lower limit, scripture may be chanted by an assembly with pacing supplied by struck instruments alone. At the upper limit, a multi-day communal offering deploys melodic instruments, differentiated vocal delivery by officiants in distinct positions, prescribed movement, and an extended sequence of divisions. The range is therefore wide, and the criteria of Definition 12.2 separate its ends clearly.

What varies across the range is the deployment of melodic instruments and the extent of solo melodic delivery. What remains constant is the presence of the struck instruments and the pacing function they perform. The constancy is informative: the element that persists at the lower limit is the element that performs coordination.

14.9 The Relational Architecture and the Operation of Relations Within It

This section applies the criterion of operation to the Daoist material. Its objective is to determine which of the relations reported in Section 7 govern the conduct of the rite and which govern its internal sounding organisation, the distinction fixed in Chapter 4. It proceeds by treating each in turn and stating the result.

Relations governing the conduct of the rite are readily identified. The bureaucratic char-

acter of the address to the celestial administration determines that documents are presented, that they are presented by a competent officiant, and that the officiant occupies a defined position with respect to the assembly. The differentiation of positions determines who delivers which portion of the liturgy. The definition of the beneficiary community determines on whose behalf the rite is undertaken. Each of these is operative in the external sense: it governs who acts, when, and with what implement.

Relations governing the internal sounding organisation are a distinct question and the evidence bearing on it is weaker. One connection may be stated with some confidence. The assignment of solo delivery to the officiant and collective delivery to the assembly corresponds to the alternation of unmetered and metered organisation established in Section 5. The correspondence is not merely a labelling: a body of voices requires a maintained pulse to sound together, and the officiant delivering alone does not. The relational differentiation of positions therefore has a consequence within the sounding organisation itself, by way of the coordination requirement.

Claim 14.9.1. (Operation of positional differentiation within the sounding organisation).

The differentiation of ritual positions between officiant and assembly is operative within the internal temporal organisation of Daoist liturgical sound, through the coordination requirement that collective delivery imposes and solo delivery does not.

The claim is deliberately narrow. It establishes one channel by which a relational feature enters the internal organisation of the music, and the channel runs through a physical requirement of collective sounding. Claims of wider scope, for instance that the melodic content of a *yun* corresponds to a cosmological doctrine, are not supported by the evidence assembled here, and Section 14.10 supplies the reason.

14.10 Variation Across Lineage, Locality and Period

This section presents the comparison that the chapter exists to supply. Its objective is to establish that a fixed liturgical text receives divergent sounding realisations, to state what the divergence is not explained by, and to separate three candidate mechanisms. It proceeds by identifying the diverging realisations, stating the constancy of the text, drawing the negative result, and setting out the mechanisms with the evidence that would discriminate among them.

Three families of realisation are named in the literature. The style associated with the Wudang mountain complex is designated *Wudang yun* (武当韵), and the literature on it distinguishes within it a category used for rites of blessing and regular offices from a category used for rites concerning the dead.¹¹ The most widely propagated contemporary style is designated *shifang yun* (十方韵, ten directions), also known as *Quanzhen zhengyun* (全真正韵) and associated with the Beijing temple whose name supplies the alternative designation *Baiyun yun*

¹¹The distinction is reported in the Wudang literature as one between *yangyun* (阳韵) and *yinyun* (阴韵). The scope of the distinction and its consistency across the repertoire stand on the verification list.

(白云韵). A regional family associated with Sichuan is designated *Guangcheng yun* (广成韵). Further local realisations are reported in the regional collections cited in Section 1.

The verbal texts realised by these families overlap substantially. Scriptures and liturgical compilations transmitted through the canon are common property of the ordination tradition, and the manuals prescribing the sequence of communal rites are shared in their principal outlines. The doctrinal content of a scripture does not differ according to the *yun* in which it is chanted.

Claim 14.10.1. (Underdetermination of realisation by doctrinal content). *Where a single liturgical text is realised in materially different yun across lineages and localities, the divergence of realisation is unexplained by the doctrinal content of the text.*

The claim is negative and it is the principal result of this chapter. Its effect is to remove doctrine from the explanation of musical form in this case, and thereby to pose the question that the remainder of the section addresses.

Three mechanisms are candidates, and this case permits them to be separated.

The first is *lineage transmission*. On this account a *yun* is what it is because it was received from a teacher who received it from a teacher, and the divergence among *yun* records the branching of a transmission tree. The account is the tradition's own, and it is supported by the tradition's practice of identifying a *yun* by the community that transmits it. Evidence that would support it comprises documented teacher-to-pupil chains, and correspondence between degrees of musical similarity and known genealogical proximity.

The second is *local linguistic and prosodic constraint*. On this account the melodic contour of chanted text is constrained by the tonal and prosodic properties of the local speech in which the practitioners are competent, so that communities speaking different varieties arrive at different realisations of the same written text. The mechanism is well attested for sung genres in tonal languages generally; research on Cantonese has established a high degree of correspondence between lexical tone and melodic movement, while comparative work has established that the strength of the constraint varies across languages and that it operates as a soft constraint which musical considerations may override.¹² Evidence that would support the mechanism for Daoist liturgy comprises systematic comparison of melodic contour with the tonal categories of the local speech variety at each site.

The third is *institutional reproduction*. On this account a *yun* persists and spreads according to the institutions that teach and enforce it, so that a realisation propagated by a central establishment, a published collection or a training programme displaces local realisations. Evidence that would support the mechanism comprises the documented history of such propagation.

¹²Bell Yung, "Creative Process in Cantonese Opera I: The Role of Linguistic Tones," *Ethnomusicology* 27, no. 1 (1983): 29–47; Marjorie K. M. Chan, "Tone and Melody in Cantonese," *Proceedings of the Berkeley Linguistics Society* 13 (1987): 26–37; Murray Schellenberg, "Does Language Determine Music in Tone Languages?" *Ethnomusicology* 56, no. 2 (2012): 266–278. Schellenberg's comparative result, that correspondence is high in Cantonese and low in some other tone languages, establishes that the constraint is language-specific and must be demonstrated rather than assumed for any given case.

The three mechanisms are separable in this case, and the third is directly observable in the documented period. What supplies the instrument of propagation is the combination of a central establishment maintaining a standardised style with the publication of that style in notated form, whose effects may be traced by comparing realisations documented before and after. Where the standardised style is found displacing a local realisation within the documented period, institutional reproduction is established for that instance.

The dependence of this result upon a particular publication is recorded, since the bibliographic details of the collection cited above stand on the verification list for this chapter. Should that item prove other than as reported, the result is unaffected in its general form, since the mechanism requires a central establishment together with some instrument of dissemination and does not require any particular one; what would be lost is the dating, and with it the ability to place the propagation within a determinate window.

Two further matters belonging to this section are recorded as contested and are left open. The first concerns continuity. The tradition traces its chanted practice to a text of the fifth century, and the ascription is attested as an ascription by the sources that make it; whether the sounding practice of any documented present-day *yun* stands in a relation of musical continuity to fifth-century practice is not established by any evidence known to the present author, and the question is left open. The second concerns the recent history of the Hong Kong repertoire, which is reported to have been adjusted and transmitted by senior ritual masters from the 1950s and to exhibit the influence of regional theatrical music; if so, the Hong Kong material documents a twentieth-century formation, and its use as evidence of earlier practice is blocked.

14.11 Results and Their Limits

This section states what the chapter establishes and what it leaves undetermined. Its objective is to fix the contribution of the Daoist case to the argument of Part III. It proceeds by stating the results, then the limits.

The chapter establishes three results. The verbal content of Daoist communal liturgy is fixed and transmitted in writing while its melodic realisation is transmitted orally and varies across communities, which supplies a case of one layer held constant while another varies. The divergence of realisation is unexplained by the doctrinal content of the texts realised, which removes doctrine from the explanation of musical form here. The differentiation of ritual positions between officiant and assembly is operative within the internal temporal organisation of the sound, through the coordination requirement imposed by collective delivery.

Four limits are recorded. First, the documentation on which the chapter rests dates from the late 1970s onward, and no claim about earlier sounding practice is established here. Second, the three candidate mechanisms are separated and the evidence that would discriminate among them is specified, and the discrimination is not performed here; the second mechanism in particular would require phonetic and melodic comparison at each site, which the existing literature has not undertaken for this repertoire. Third, the claim of Section 14.9 establishes

one channel of operation, running through a physical requirement of collective sounding, and supports no wider correspondence between melodic content and doctrine. Fourth, several specific reports relied upon in Sections 5 and 10 stand on the verification list of this chapter and are marked accordingly.

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Chapter 15

Chinese Buddhist Ritual Sound and the Range of Liturgical Elaboration

This chapter treats the second of the eleven traditions and supplies the case on which the negative control of Chapter 12 rests. Its role is twofold: to exhibit within a single tradition the full range from a sounding organisation at its lower limit to one deployed across a multi-day assembly, and to establish the Chinese term of the language-boundary comparison completed in Chapter 16. It undertakes to establish three things: that the ordinary liturgical practice of the tradition operates at the lower limit of sounding elaboration while enacting a dense relational content; that the element persisting at that limit is the element performing temporal coordination; and that the elaboration observed at the upper limit tracks the assembly of participants and the resources of the occasion. It follows the template of Chapter 13.

15.1 The Field in Outline and Its Sources

This section identifies the material treated and the literature relied upon. Its objective is to fix the extent of the case and to date the documentation. It proceeds by naming the practice, indicating its institutional range, and identifying the scholarship with the dates of its evidence.

The material treated is the sounding practice of Chinese Buddhist monastic liturgy, designated in the tradition by the term *fanbai* (梵呗), a compound whose second element derives from a Sanskrit term for recitation. The practice is common to the monastic traditions of Chinese Buddhism, and versions of it were transmitted to Korea and to Japan, where the Japanese line is treated in Chapter 16.

Two portions of the practice are treated here. The first is the daily office, the morning and evening services (*chaomu kesong*, 朝暮课诵) performed by monastic communities. The second is the class of large periodic assemblies, of which the rite of deliverance for beings of water and land is the principal instance.

Transcriptions of contemporary Chinese Buddhist monastic chant, including the daily liturgy, have been published by Chen Pi-yen in the Recent Researches in the Oral Traditions of Music series.¹ The textual and art-historical study of the large assembly rite is treated by

¹Pi-yen Chen, ed., *Fanbai: Chinese Buddhist Monastic Chants*, Recent Researches in the Oral Traditions of Music 8 (Middleton, WI: A-R Editions, 2010).

Daniel B. Stevenson.²

The documentation of sound for this tradition dates from the twentieth century onward, and predominantly from its second half. Statements about the sounding organisation of the practice are statements about that period.

15.2 The Textual and Normative Layer

This section identifies the verbal material and its regulation. Its objective is to establish the fixity of the text and the character of the tradition's prescription concerning delivery. It proceeds by identifying the classes of text, indicating their transmission, and characterising the prescriptive material on sounding.

The verbal material comprises scriptures transmitted in the Chinese Buddhist canon, together with liturgical compilations arranging selected texts, dhāraṇī and verses for use in the daily office and in periodic rites. Transmission is by manuscript and print and, in the modern period, by widely circulated printed liturgical books. The fixity of the verbal content is accordingly high.

Prescription concerning delivery is of a different character from prescription concerning text. The liturgical books specify the order of items and mark the points at which the struck instruments sound. They supply no melodic specification comparable to a notation, and the melodic realisation is transmitted by participation. The tradition's commentarial literature on chant addresses the propriety and effect of sounding practice.

Claim 15.2.1. (Prescription of instrumental articulation without melodic specification). *The liturgical books of Chinese Buddhist monastic practice prescribe the points at which the struck instruments sound, and leave the melodic realisation of the chanted text to transmission by participation.*

The claim identifies where the tradition's own writing places its precision. Precision attaches to the text and to the temporal articulation of the rite; melodic realisation is carried by other means.

15.3 Material Provision

This section describes the sounding implements and the setting. Its objective is to identify the material resources of the practice and to establish the small size of the minimum set. It proceeds by naming the implements, indicating their function, and characterising the spatial setting.

The characteristic implements are struck: the wooden slit drum (*muyu*, 木鱼), the small hand-held struck bowl used to signal (*yinqing*, 引磬), a large struck bowl (*daqing*, 大磬), paired

²Daniel B. Stevenson, "Text, Image, and Transformation in the History of the Shuilu fahui, the Buddhist Rite for Deliverance of Creatures of Water and Land," in Marsha Weidner, ed., *Cultural Intersections in Later Chinese Buddhism* (Honolulu: University of Hawaii Press, 2001).

small cymbals and gongs, and drums and a large bell in the monastery's fixed installations. Melodic instruments appear in some occasions, and their appearance is treated in Section 8.

The minimum set is one implement. The daily office may be conducted with the voices of the assembly and the wooden slit drum alone, and the office may also be conducted with the text delivered as speech without instrumental sounding.

The setting is the monastery hall, with the assembly disposed in ranks facing the altar and the officiants positioned by function. Large assemblies extend into subsidiary halls and courtyards, and the spatial extension bears on the coordination problem discussed in Section 5.

15.4 Bodily Practice

This section describes the bodily dimension of the practice. Its objective is to characterise vocal delivery and the movement with which it is coordinated. It proceeds by treating delivery, movement, and the mode of acquisition.

Vocal delivery of the daily office is collective and monophonic, with the assembly delivering the text together. The delivery occupies an intermediate position between speech and song: pitch is differentiated, and the differentiation is narrow, with the melodic movement of a phrase confined to a small compass.

Movement is prescribed at points of the office and is extensive in the large assemblies, where prostration and circumambulation are performed by an assembly whose coordination is maintained by the struck instruments.

Acquisition is by participation. A novice acquires the practice of the community by performing it daily under the regulation of the officiants. The daily frequency of the office is a feature of the mode of acquisition: the practice is acquired by repetition at short intervals over years.

15.5 Temporal Organisation

This section describes the temporal organisation of the practice. Its objective is to establish that the pulse supplied by the struck instruments performs the coordination of a collective sounding body, and to identify the position from which that pulse is regulated. It proceeds by describing the pulse, identifying the regulating position, and stating the result.

The wooden slit drum supplies a pulse against which the syllables of the text are delivered. The pulse regulates the rate of delivery and holds a body of voices together. Signalling instruments mark the transitions between items of the liturgy.

The position regulating the pulse is that of the *weiniu* (维那), the officiant charged with leading and regulating the chant of the assembly. The position is defined in the monastic order of offices, and its occupant is designated in advance.

Claim 15.5.1. (Location of temporal control in a designated office). *The temporal regulation of*

collective delivery in Chinese Buddhist monastic liturgy is effected by struck instruments handled from a designated monastic office, so that the pacing of the assembly's sound is a function assigned within the community's order of offices.

The claim parallels the result obtained for the Daoist material in Chapter 14, and the parallel is examined comparatively in Chapter 25. The two traditions differ in doctrine, in the relations their rites address and in their institutional forms, and they converge in assigning temporal control of collective sound to a defined position.

The large assemblies introduce a coordination problem of a different scale. Where an assembly extends across halls and courtyards and endures for several days, the maintenance of collective delivery requires a distribution of the pacing function, with subsidiary instruments repeating the signals of the principal one. The documentation available to the present author does not permit a detailed treatment, and the matter is recorded as a gap.

15.6 Social Organisation and the Division of Ritual Labour

This section describes the differentiated positions in the practice. Its objective is to identify the positions and the criteria attaching to them, and to characterise transmission. It proceeds by naming the positions, stating the criteria, and treating lay participation.

The monastic order of offices assigns the regulation of chant to the *weinuo* and assigns further functions to designated officiants. The assembly delivers the text collectively. Eligibility for the offices follows from ordination and from seniority within the community, and the criteria are set by the monastic rule.

Lay participation is a substantial feature of the large assemblies, where lay sponsors and participants attend and may join in portions of the delivery. The composition of the sounding body accordingly changes between the daily office, whose participants are the monastic community, and the periodic assembly, whose participants include a lay congregation. The change bears on the elaboration treated in Section 8.

Transmission of the practice proceeds within the monastery and across the network of monasteries through the movement of personnel. Regional and school differences in practice are reported in the literature; a systematic comparative study of melodic divergence across Chinese Buddhist monastic communities, of the kind available for the Daoist *yun*, has not been undertaken so far as the present author is aware, and the absence is recorded as a gap bearing directly on Chapter 26.

15.7 The Relations Enacted

This section reports the relational commitments of the practice in the tradition's own terms. Its objective is to supply the relational description independently of the musical evidence. It proceeds along the four axes of Chapter 11.

Along the axis of relations among human persons, the office constitutes the monastic com-

munity as a collective party. The text is delivered by all together, and the delivery is one of the practices by which the community's common life is maintained. The large assemblies extend the constituted party to include lay sponsors and participants.

Along the axis of relations to the non-human world, the rites of deliverance address beings of classes beyond the human, and the enumeration of the classes addressed is part of the ritual documentation.

Along the axis of relations to the dead, the dedication of merit directs the effect of the practice toward beings other than the practitioner, including the dead. The structure of the dedication posits a transferable relation between the practitioner's action and the condition of others.

Along the fourth axis, the tradition articulates a relation to a body of teaching held to have been transmitted from its source across a lineage, and the recitation of scripture is among the practices by which that relation is maintained.

15.8 Degree of Musical Elaboration

This section places the tradition on the scale of Chapter 12. Its objective is to establish the range and to identify what varies across it. It proceeds by characterising the two ends and stating the finding.

At the lower limit, the daily office is delivered by the assembly with a single struck instrument supplying the pulse, and may be delivered as speech. Measured on the three criteria of Definition 12.2, the sounding organisation comprises one part, a narrow range of pitch and durational distinction, and fixity residing chiefly in the text.

At the upper limit, a multi-day assembly deploys melodic instruments, extended melismatic delivery of certain items, differentiated participation by monastic and lay bodies, and an extended sequence of divisions. The occasion is periodic and resourced by sponsorship.

What varies across the range is the deployment of melodic resource and the extent of melismatic delivery. What persists is the struck instrument and the pulse it supplies.

Claim 15.8.1. (Persistence of the coordinative element across the range of elaboration). *In Chinese Buddhist monastic practice, the element persisting at the lower limit of sounding elaboration is the element performing temporal coordination of collective delivery.*

The claim supplies the tradition-internal form of the general result argued in Chapter 25. Elaboration is added to a core, and the core is coordinative.

15.9 The Relational Architecture and the Operation of Relations Within It

This section applies the criterion of operation. Its objective is to determine which relations govern the conduct of the practice and which govern its internal sounding organisation. It proceeds by treating each and stating the result together with its limit.

Relations governing conduct are identified without difficulty. The monastic order of offices determines who regulates the chant. The daily cycle determines when the office is performed. The structure of dedication determines the items delivered and their order. The distinction between monastic and lay participation determines who may occupy which position in the large assemblies.

Relations governing the internal sounding organisation are again a narrower matter. The constitution of the community as a collective party delivering a text together imposes the coordination requirement, and the coordination requirement is met by the pulse. The correspondence holds in the same manner as in the Daoist case: a relational feature of the rite, namely that delivery is collective, has a consequence within the sounding organisation, namely that a pulse is maintained.

The limit of the result is stated plainly. The evidence assembled here establishes that collective delivery requires and receives temporal regulation. It establishes nothing about the melodic content of the delivery, and no correspondence between that content and any doctrinal commitment of the tradition is claimed.

15.10 Variation Across Region, School and Period

This section treats variation. Its objective is to state what is known and to identify what is unavailable. It proceeds by reporting the classes of variation and by recording the evidential gap.

Variation across regions and across the schools of Chinese Buddhism is reported in the literature, and variation in the melodic realisation of the daily office across monastic communities is a matter of common observation among practitioners. A systematic comparative documentation of that variation, permitting the kind of analysis carried out for the Daoist *yun* in Chapter 14, is not available to the present author.

The gap is consequential for the argument of Part III and is recorded here as an outstanding requirement. Were such documentation available, the Chinese Buddhist case would supply a second instance of the comparison on which Chapter 26 rests, within a tradition whose institutional structure differs from the Daoist one. The comparison that is available crosses a language boundary and is completed in Chapter 16.

15.11 Results and Their Limits

This section states what the chapter establishes and what it leaves undetermined.

The chapter establishes three results. The ordinary liturgical practice of the tradition operates at the lower limit of sounding elaboration while enacting a relational content that is dense on all four axes, which supplies the negative control of Chapter 12. The element persisting at that lower limit is the struck instrument supplying the pulse, and its handling is assigned to a designated monastic office, so that temporal control of collective sound is a function within

the community's order of offices. The elaboration observed at the upper limit tracks the assembly of a larger and differently composed body of participants together with the resources of a sponsored occasion.

Three limits are recorded. The documentation of sound for this tradition dates from the twentieth century, and no claim about earlier sounding practice is made here. The coordination of sound across the spatially extended large assemblies is not treated in detail, for want of documentation. A systematic comparative study of melodic divergence across Chinese Buddhist monastic communities is unavailable, which prevents this chapter from supplying a second instance of the text-constant comparison and places that burden on Chapter 16.

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Chapter 16

Japanese Buddhist *Shōmyō* and the Realisation of a Transmitted Chant Tradition

This chapter completes the language-boundary comparison opened in Chapter 15. Its role is to exhibit a chant tradition descended from the Chinese Buddhist practice treated there, realised in a different linguistic and institutional setting, so that the divergence may be examined. It undertakes to establish three things: that the Japanese tradition maintains a notational system whose insufficiency the tradition itself asserts, which supplies a case of prescribed transmission by other means; that the melodic organisation of the tradition employs scalar resources of the receiving culture; and that the comparison with the Chinese case isolates a variable that the comparison of Chapter 14 holds fixed. It follows the template of Chapter 13.

16.1 The Field in Outline and Its Sources

This section identifies the material and the literature. Its objective is to fix the extent of the case and to date the documentation. It proceeds by naming the practice, identifying the schools within which it is maintained, and listing the scholarship.

The material treated is *shōmyō* (声明), the Buddhist liturgical chant of Japan, maintained principally within the Tendai and Shingon schools and present in other traditions. The practice is understood by its maintainers as descended from Indian Buddhist chant transmitted through China and Korea following the introduction of Buddhism to Japan in the sixth century.

The principal scholarship in Western languages comprises the work of Steven G. Nelson, of Kōjun Arai on notation, and of Michael Monhart on the use of chant in Shingon ritual.¹ The *kōshiki* genre of Buddhist liturgical text and its performance received a dedicated treatment in a 2016 special issue of the *Japanese Journal of Religious Studies*.²

¹Steven G. Nelson, “Buddhist Chant of Shingon-Shingon: A Guide for Readers and Listeners” (1998); Kōjun Arai, *Musik und Zeichen: Notationen buddhistischer Gesänge Japans, Schriftquellen des 11.–19. Jahrhunderts* (Cologne: Museum für Ostasiatische Kunst, 1986); Michael Monhart, “A Fusion of Horizons: Shōmyō in Kogi Shingon Ritual,” *Studies in Central and East Asian Religions* 7 (1994): 1–26, and “The Use of Shōmyō in Shingon Ritual,” *Studies in Central and East Asian Religions* 5–6 (1992–93): 139–144. Bibliographic details for the Nelson item stand on the verification list.

²Barbara Ambros, James Ford and Michaela Mross, eds., special issue on *kōshiki*, *Japanese Journal of Religious Studies* 43, no. 1 (2016).

The state of the field carries a methodological consequence which Monhart himself has noted: scholarship on *shōmyō* has developed along sectarian lines, with comparative work across schools remaining limited. Statements made here about the tradition as a whole are correspondingly cautious.

16.2 The Textual and Normative Layer

This section identifies the verbal material and the tradition's notational system. Its objective is to establish that the tradition maintains a notation together with an explicit doctrine of that notation's insufficiency. It proceeds by identifying the texts, describing the notation, and stating the doctrine of transmission.

The verbal material comprises liturgical texts of several linguistic layers: texts in Sino-Japanese readings of Chinese Buddhist originals, texts in Japanese, and transliterated Sanskrit material. The layering is itself a datum for the comparison of Section 16.10, since a single tradition sounds material of distinct phonological character.

Notation is by *hakase* (博士), graphs indicating melodic movement, whose historical development from the eleventh century onward is documented in Arai's study of the written sources. The notation indicates the shape of melodic movement.

The tradition's own doctrine concerning the transmission of chant is that the graphs are insufficient without oral instruction. Transmission proceeds by *kuden* (口伝), instruction from teacher to pupil, and the notation serves as an aid to a transmission held to require the teacher's presence. A medieval treatise attributed to Kakui addresses precisely this relation between graph and oral transmission.³

Claim 16.2.1. (Prescribed insufficiency of notation). *The Japanese Buddhist chant tradition maintains a notational system together with a doctrine that the notation is insufficient for transmission without oral instruction, so that the written record and the transmitted practice occupy distinct positions within the tradition's own account of itself.*

The claim is of interest beyond this chapter. A tradition that writes its melodies and denies that the writing suffices supplies a case in which the relation between notation and practice is stated by the tradition, and Chapter 25 returns to it in comparison with the traditions treated in Chapters 21 and 19.

A consequence follows for the survival of the practice, and the scholarship notes it. Where transmission requires the teacher's presence, an interruption in the chain of teachers is not repairable from the written record, and school traditions have been lost.

³The treatise survives in an eighteenth-century copy held at Kōyasan University Library; the copyist's name and the date of the copy stand on the verification list.

16.3 Material Provision

This section describes the material dimension. Its objective is to characterise the sounding resources and the setting. It proceeds by treating the voice, the percussion, and the temple space.

The practice is vocal and unaccompanied in its principal portions. Percussion marks transitions and articulates the sections of a rite. Melodic instruments belong to the associated court and temple ensemble traditions and stand apart from *shōmyō* proper.

The setting is the temple hall, whose construction and dimensions supply an acoustic of considerable reverberation. The relation between the acoustic properties of these spaces and the slow, sustained delivery characteristic of the practice has been remarked in the literature; a systematic acoustic study is unavailable to the present author and the connection is recorded as a conjecture.

16.4 Bodily Practice

This section describes vocal production and the discipline through which it is acquired. Its objective is to characterise the delivery and the mode of acquisition.

Delivery is slow, sustained, and executed with a vocal production the tradition cultivates deliberately. Syllables of the text are extended across long melodic phrases in the elaborated portions of the repertoire, so that the verbal text proceeds at a rate far below that of speech.

Acquisition proceeds by the oral instruction described in Section 2. The pupil acquires the practice by singing with the teacher, with the graphs serving as an aid to memory and as a record of what has been transmitted.

16.5 Temporal Organisation

This section describes temporal organisation. Its objective is to establish that the principal repertoire is organised without a maintained pulse and to identify the means by which collective delivery is nonetheless coordinated. It proceeds by characterising the organisation, identifying the coordination means, and stating the comparative result.

The principal repertoire is delivered without a maintained metrical pulse. The temporal organisation is governed by the phrase and by the breath, with the duration of syllables determined by the melodic shape and by the practice of the school.

Coordination of collective delivery under these conditions is effected differently from the traditions of Chapters 14 and 15. A leading voice initiates and the assembly follows, with the timing of entries and of movement between pitches governed by the acquired practice of the school. Percussion marks structural points and does not supply a pulse against which delivery proceeds.

Claim 16.5.1. (Coordination without a maintained pulse). *Collective delivery in the Japanese Buddhist chant tradition is coordinated by a leading voice together with practice acquired in common, without a maintained metrical pulse of the kind supplied by the struck instruments of the Chinese and Daoist traditions.*

The claim identifies a genuine divergence between the Chinese and Japanese branches of a single transmitted tradition, and it bears directly on the general question raised in Chapter 25 concerning the relation between collective delivery and metrical organisation. The result of Chapter 14 associated collective delivery with a maintained pulse; the present case establishes that the association is a tendency admitting of exceptions, and that a second solution to the coordination problem exists, resting on common acquisition among the participants.

The second solution carries a condition, and the condition is worth stating because it connects to the transmission doctrine of Section 2. Coordination by common acquisition requires that the participants have acquired the practice in common, which is to say from a shared line of instruction. A body of singers trained in different schools cannot coordinate by this means. The doctrine that transmission requires the teacher's presence and the practice of coordination without external pulse are accordingly connected: the same institutional fact underwrites both.

16.6 Social Organisation and the Division of Ritual Labour

This section describes the differentiated positions and the structures of transmission. Its objective is to identify the positions and to characterise the school traditions.

Positions within a rite are assigned by function and by seniority, with a leading voice initiating items and the assembly following. Eligibility follows from ordination and from acquired competence in the school's practice.

Transmission is organised by school, and the schools maintain distinct repertoires and distinct realisations of shared items. The sectarian organisation of the tradition extends to its scholarship, as noted in Section 1, with the consequence that the comparative question of how far the schools diverge in their realisation of shared material is less well documented than the internal history of each.

16.7 The Relations Enacted

This section reports the relational commitments in the tradition's own terms, along the four axes of Chapter 11.

Along the axis of relations among human persons, the rite constitutes the assembly as a collective party and differentiates it by function and seniority. The relation between teacher and pupil occupies a position of particular prominence, since the tradition holds the practice to be transmissible only through it.

Along the axis of relations to the non-human world and along the axis of relations to the

dead, the tradition's commitments follow those of the Buddhist traditions from which it descends, with rites of memorial and dedication forming a substantial portion of practice.

Along the fourth axis, the tradition maintains a relation to a body of teaching held to have been transmitted from its source through a lineage of teachers, and the chant is among the practices in which that transmission is enacted and made audible.

16.8 Degree of Musical Elaboration

This section places the tradition on the scale of Chapter 12. Its objective is to establish the range and to state what varies across it.

The range is wide. Simpler items approach the delivery of text with limited melodic differentiation. The elaborated repertoire extends syllables across long melismatic phrases, and its performance requires extended training. Measured on the criteria of Definition 12.2, the elaborated repertoire is high on the second criterion, concerning the range of pitch and durational distinction, and high on the third, concerning the fixity and transmission of the sounding material as such, while remaining at one part on the first.

The profile distinguishes this tradition from those of Chapters 14 and 17, whose elaboration proceeds substantially by the addition of sounding parts. Elaboration here proceeds by the internal differentiation of a single part.

16.9 The Relational Architecture and the Operation of Relations Within It

This section applies the criterion of operation. Its objective is to identify the operative relations and to state the result with its limit.

Relations governing conduct are the assignment of leading and following positions, the eligibility criteria attaching to them, and the calendrical and occasional placement of rites.

One relation is operative within the internal sounding organisation, and it is the teacher-pupil relation. The tradition's doctrine that transmission requires the teacher's presence, together with the coordination result of Section 5, entails that the internal temporal organisation of collective delivery depends upon the participants sharing a line of instruction. The relation is therefore operative in the strong sense: it enters the temporal structure of the sound, and a change in it, such as the assembly of singers from different schools, would alter that structure.

Claim 16.9.1. (Operation of the transmission relation within temporal organisation). *In a tradition coordinating collective delivery by common acquisition without external pulse, the relation of instruction through which the practice is acquired is operative within the internal temporal organisation of the sound.*

The limit is the same as in the preceding chapters. The result concerns temporal organisation. It establishes no correspondence between melodic content and doctrinal commitment.

16.10 Variation Across Schools, Languages and Periods

This section presents the comparison the chapter exists to supply. Its objective is to state what the comparison with the Chinese tradition isolates, to report the divergences, and to record the limits of the inference. It proceeds by stating the design, reporting the divergences, and recording the limits.

The design of the comparison is as follows. The Japanese tradition descends from the Chinese one, and the two share a body of textual material and a body of doctrine. They differ in the language in which the material is sounded, in the institutional structures maintaining the practice, and in the geographical and historical setting. Where the comparison of Chapter 14 holds language and doctrine fixed and varies lineage and locality, the present comparison holds doctrine and a substantial portion of textual material fixed and varies language and institution.

Three divergences are reported. The first concerns temporal organisation and is stated in Section 5: the Chinese practice coordinates collective delivery by a maintained pulse supplied from a designated office, and the Japanese practice coordinates by common acquisition without such a pulse. The second concerns notation: the Japanese tradition maintains a melodic notation with a documented history from the eleventh century, and the Chinese practice treated in Chapter 15 prescribes instrumental articulation without melodic specification. The third concerns the scalar resources employed: the melodic organisation of *shōmyō* is described in the scholarship as employing the scalar resources of Japanese musical practice, so that material of Chinese and Sanskrit origin is realised within a receiving system.⁴

Two limits on the inference are recorded, and they are substantial.

The first is that the comparison varies several factors at once. Language, institutional structure, geographical setting and historical period all differ between the two branches, and the divergences reported cannot be attributed to any one of them without further evidence. The comparison of Chapter 14 is cleaner in this respect, and the present comparison supplies breadth at the cost of precision.

The second is that the Chinese term of the comparison is documented for the twentieth century, and the Japanese term is documented from the medieval period onward through its written sources and from the twentieth century for its sound. The two terms are therefore not contemporaneous in their documentation, and inferences about the moment of divergence are unavailable.

16.11 Results and Their Limits

This section states what the chapter establishes and what it leaves undetermined.

The chapter establishes three results. The tradition maintains a notational system together

⁴The identification of the scale employed is reported in the secondary literature and stands on the verification list; the general point, that the receiving culture's scalar resources are employed, is not in dispute in the scholarship known to the present author.

with an explicit doctrine of that notation's insufficiency, which locates transmission in the relation of instruction and makes an interruption of that relation unrepairable from the written record. Collective delivery is coordinated without a maintained pulse, by common acquisition, which establishes that the association between collective delivery and metrical organisation found in Chapters 14 and 15 is a tendency admitting of a second solution. The relation of instruction is thereby operative within the internal temporal organisation of the sound, since coordination by common acquisition requires that the participants share a line of instruction.

Three limits are recorded. The comparison with the Chinese tradition varies language, institution, setting and period together, so that the divergences reported are not attributable to any single factor. The documentation of the two terms is not contemporaneous, so that the moment and manner of divergence are unavailable. The scholarship on the tradition is organised along sectarian lines, so that the divergence among schools in their realisation of shared material is less well documented than the internal history of each, and the statements made here about the tradition as a whole are correspondingly provisional.

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Chapter 17

Tibetan Buddhist Ritual Sound and the Deployment of Material Resource

This chapter treats the third of the eleven traditions and supplies the case at the opposite end of the elaboration scale from Chapter 15. Its role is to exhibit a tradition, descended from the same religious inheritance as the two preceding chapters, whose sounding organisation deploys a large ensemble of differentiated material resources. It undertakes to establish three things: that a tradition sharing doctrinal ancestry with the practices of Chapters 15 and 16 exhibits a sounding organisation of a wholly different profile; that the tradition's own classification of its vocal categories is organised by the relation between text and melodic extension; and that the material of certain instruments carries relational content of a kind the tradition articulates explicitly. It follows the template of Chapter 13.

17.1 The Field in Outline and Its Sources

This section identifies the material and the literature. Its objective is to fix the extent of the case and to record the conditions under which the documentation was made. It proceeds by naming the practice, listing the scholarship, and stating the documentary situation.

The material treated is the ritual sounding practice of the Tibetan Buddhist monastic traditions, comprising vocal delivery of liturgical texts, the playing of a characteristic instrumental ensemble, and the masked dance known as *cham*.

The principal scholarship is that of Ter Ellingson, whose doctoral study of 1979 remains the fullest treatment of the tradition's sound structures and whose article of the same year set out the tradition's melodic categories.¹ Earlier and adjacent work comprises Walter Kaufmann's study of notated chant of two orders, Mireille Helffer's organological and ethnomusicological work, and Lobsang P. Lhalungpa's survey.²

¹Ter Ellingson, "The Mandala of Sound: Concepts and Sound Structures in Tibetan Ritual Music" (PhD diss., University of Wisconsin–Madison, 1979); "'Don rta dbyangs gsum: Tibetan Chant and Melodic Categories,'" *Asian Music* 10, no. 2 (1979).

²Walter Kaufmann, *Tibetan Buddhist Chant: Musical Notations and Interpretations of a Song Book by the bKah brgyud pa and Sa skya pa Sects* (Bloomington: Indiana University Press, 1975); Mireille Helffer, entry "Dung-chen" in the *Grove Dictionary of Musical Instruments*, and her chapter in the *Garland Encyclopedia of World Music*, vol. 5, *South Asia* (New York: Garland, 2000), 709–717; Lobsang P. Lhalungpa, "Tibetan Music: Secular and Sacred," *Asian Music* 1, no. 2 (1969): 2–10.

Ellingson's study opened with a corrective which bears on the design of Part III. He contested the assumption, then current in Western scholarship, that Buddhism was in its original form averse to ritual and to music. The present chapter records the correction and takes no position on the historical question it addresses.

The documentary situation requires statement. A substantial portion of the recorded and observed material for this tradition was gathered in monastic institutions re-established outside Tibet after 1959. Those institutions reassembled their practice under conditions of displacement, and the reassembly involved the selection and reconstruction described in Section 13.2 of Chapter 13. Statements here about sounding practice are statements about the documented institutions at the dates of documentation.

17.2 The Textual and Normative Layer

This section identifies the verbal material and its notation. Its objective is to characterise the texts and to describe the tradition's melodic notation. It proceeds by naming the classes of text and describing the notation with its limits.

The verbal material comprises liturgical compositions for the rites of particular deities and occasions, together with ritual manuals prescribing the sequence of action. The texts are transmitted in written form within each order and monastery.

Melodic notation exists in the form of curve notations, recorded in manuscript collections belonging to particular monastic traditions. Kaufmann's study treats notated material of two orders. The notation records the shape of melodic movement and functions within a practice whose transmission is chiefly by instruction.

17.3 Material Provision

This section describes the sounding implements. Its objective is to characterise the ensemble, to identify the acoustic function of its principal members, and to treat the class of instruments made from human remains together with the scholarship on their origin. It proceeds by enumerating the ensemble, treating the low aerophones, and treating the bone instruments.

The ensemble comprises aerophones, idiophones and membranophones. The aerophones include long telescoping trumpets (*dung chen*), whose sounding compass is confined to a small number of low pitches; double-reed shawms (*rgya gling*), which carry melodic material; and conch trumpets (*dung dkar*). The idiophones include paired cymbals of two types, distinguished in the tradition by playing technique and function, and hand bells (*dril bu*). The membranophones include frame and barrel drums (*rnga*) and the small double-headed hand drum (*damaru*).

The low aerophones warrant separate notice. Their sounding compass is narrow and their register is low, so that their contribution to the ensemble is a sustained low sonority. The functional division between instruments supplying a sustained low sonority and instruments

supplying melodic material is therefore built into the instrumentarium.

A class of instruments is made from human remains: a trumpet from a thighbone (*rkang gling*) and a drum from parts of skulls (*thod rnga*). Ellingson traced instruments of this class to ascetic practice of Indian origin.³ The tradition's own account connects the instruments to contemplative practices concerning impermanence and death. The material of these instruments accordingly carries content that the tradition articulates, and Section 9 returns to the point.

17.4 Bodily Practice

This section describes vocal production and movement. Its objective is to characterise the modes of delivery, including the practice of producing multiple audible pitches from a single voice, and to describe the movement traditions. It proceeds by treating vocal production, the multiphonic practice, and dance.

Vocal delivery of liturgical text proceeds in a low register, with a vocal production cultivated through training. The tradition's melodic categories are treated in Section 5.

A practice of vocal production yielding audible pitches above the fundamental is maintained in the tantric colleges of certain orders. The practice is acquired through extended training and is confined to specified institutions and occasions.

The masked dance tradition (*cham*) couples sounding with prescribed movement performed in courtyards and open spaces. The coupling extends the ritual field spatially and, in doing so, alters the coordination problem, since participants are distributed across a space larger than a hall.

17.5 Temporal Organisation

This section describes temporal organisation. Its objective is to set out the tradition's own classification of vocal delivery by melodic extension, and to identify the means of ensemble coordination. It proceeds by giving the categories, describing coordination, and stating the comparative observation.

The tradition classifies vocal delivery into categories distinguished by the relation between text and melodic extension. One category comprises delivery close to recitation, proceeding at a rapid rate with limited melodic contour, in which the verbal text advances quickly. Another comprises extended melodic delivery in which syllables are prolonged and the verbal text advances slowly. Ellingson's article of 1979 sets out the categories and their terminology.

The classification is of interest for the argument of Part III because it is organised by exactly the variable that distinguishes the traditions treated in Chapters 15 and 16 from one another: the rate at which verbal text advances relative to melodic elaboration. A tradition has here

³Ter Ellingson, "Indian Influences in Tibetan Music" (1982); the bibliographic details of this item stand on the verification list.

made that variable explicit and given its values names.

Claim 17.5.1. (Tradition-internal classification by rate of textual advance). *The Tibetan Buddhist tradition classifies its vocal delivery by the relation between textual advance and melodic extension, so that the variable distinguishing the sounding profiles of the traditions compared in Part III is one the tradition itself names.*

Coordination of the ensemble is effected by a leader, with the cymbals performing a signalling and regulating function, and delivery proceeds in alternation between a leading voice and the assembly. The organisation is governed by breath and by the prescribed structure of the rite.

17.6 Social Organisation and the Division of Ritual Labour

This section describes the differentiated positions. Its objective is to identify the positions and the transmission structures, and to note the variation across orders. It proceeds accordingly.

Positions comprise the chant leader, instrumental specialists trained in the playing of particular instruments, and the assembly of monks. Specialisation in the instrumental parts is substantial and is acquired through dedicated training.

Transmission proceeds within monasteries and within orders. Practice varies across orders and across individual monasteries, and the variation extends to melodic material, to notational tradition and to the composition of the ensemble.

17.7 The Relations Enacted

This section reports the relational commitments in the tradition's own terms, along the four axes of Chapter 11.

Along the axis of relations among human persons, the rite constitutes the monastic assembly and differentiates it by ordination, training and function.

Along the axis of relations to the non-human world, rites address a wide array of presences, and the ritual literature enumerates them.

Along the axis of relations to the dead, contemplative practices concerning impermanence and mortality occupy a prominent place, and, as Section 3 records, certain instruments are materially connected to these practices.

Along the fourth axis, rites address deities of peaceful and wrathful aspect, with the sounding resources deployed differing according to the aspect addressed. The correspondence between the aspect addressed and the sounding resources deployed is articulated within the tradition, and Section 9 treats it under the criterion of operation.

17.8 Degree of Musical Elaboration

This section places the tradition on the scale of Chapter 12. Its objective is to characterise the profile and to contrast it with the two preceding chapters.

Measured on the criteria of Definition 12.2, the elaborated practice of this tradition is high on the first criterion, concerning simultaneously distinguishable sounding parts, since the ensemble deploys instruments of differentiated function alongside vocal delivery. It is high on the second, concerning the range of distinctions employed, given the extended melodic categories and the contrast between low sustained sonority and melodic material.

The contrast with Chapters 15 and 16 is the substantive point. Three traditions descending from a common religious inheritance exhibit three sounding profiles: one at the lower limit with a single struck instrument supplying pulse, one elaborating a single vocal part internally without ensemble, and one deploying a differentiated instrumental ensemble. The doctrinal inheritance is substantially shared; the sounding profiles are not.

Claim 17.8.1. (Divergence of sounding profile under shared doctrinal inheritance). *Three monastic traditions descending from a common religious inheritance exhibit sounding organisations differing on every criterion of Definition 12.2, which establishes that the doctrinal inheritance underdetermines the sounding profile.*

The claim generalises the result of Chapter 14 beyond a single ordination tradition, and it is the principal contribution of this chapter to the argument of Part III.

17.9 The Relational Architecture and the Operation of Relations Within It

This section applies the criterion of operation. Its objective is to identify the operative relations, to treat the case of the bone instruments, and to state the limit of the results. It proceeds accordingly.

Relations governing conduct comprise the assignment of positions, the eligibility criteria attaching to instrumental specialisation, and the calendrical placement of rites.

The correspondence between the aspect of the deity addressed and the sounding resources deployed is operative in the external sense: it governs which instruments sound on which occasion. Whether it is operative internally, in the sense of shaping the organisation of the sound itself, is a question the evidence available here leaves undetermined, and no claim is made.

The bone instruments present a case worth separate treatment, since they bear on the question of material raised in Chapter 9. The tradition articulates a connection between the material of these instruments and contemplative practices concerning mortality. The connection governs the presence of the instruments in the ensemble and is therefore operative externally. Ellingson's derivation of the class from ascetic practice of Indian origin supplies a transmission history for the instruments and supplies, in the terms of Chapter 25, evidence that their

presence follows from a documented line of transmission alongside whatever content the tradition attaches to them. The two accounts stand together without conflict: an instrument may arrive by transmission and carry content articulated by the receiving tradition.

17.10 Variation Across Orders, Monasteries and Periods

This section treats variation. Its objective is to report what is known and to record the complication introduced by the documentary situation.

Variation across orders and monasteries is substantial and is reported throughout the literature. It extends to melodic material, to the composition of the ensemble, to notational tradition and to the repertoire of the masked dance.

The complication is the one recorded in Section 1. Institutions documented after 1959 were re-established under conditions of displacement, and the practices documented in them were reassembled by the surviving holders of those practices. Comparison of present variation with variation obtaining before that period is therefore not available from the documented material, and inferences from present divergence to earlier divergence are blocked.

17.11 Results and Their Limits

This section states what the chapter establishes and what it leaves undetermined.

The chapter establishes three results. Three monastic traditions descending from a common religious inheritance exhibit sounding organisations differing on every criterion of elaboration, which establishes that the shared doctrinal inheritance underdetermines the sounding profile. The tradition classifies its own vocal delivery by the relation between textual advance and melodic extension, making explicit the variable by which the three traditions differ. The material of certain instruments carries content articulated by the tradition, and that articulation coexists with a documented transmission history for the instruments themselves.

Three limits are recorded. The documentation rests substantially on institutions re-established after 1959 under conditions of displacement, so that comparison with earlier practice is unavailable and inferences from present divergence to earlier divergence are blocked. No claim is made that the correspondence between the aspect addressed and the resources deployed is operative within the internal organisation of the sound. The bibliographic details of one item relied upon in Section 3 stand on the verification list.

Chapter 18

Shrine Ritual Sound in Japan and the Layering of Court and Local Practice

This chapter treats the fourth of the eleven traditions. Its role is to supply a case in which the sounding practice of a single tradition is distributed between a court establishment and a large body of local practices, so that the relation between a central and a dispersed realisation may be examined. It undertakes to establish three things: that the tradition's practice divides along a court and local axis whose historical relation is contested in the scholarship; that a portion of the court repertoire is restricted by the institutions maintaining it, with consequences for what may be said here; and that the relations the tradition articulates along the axis of the non-human world are unusually prominent among the traditions of Part III. It follows the template of Chapter 13.

18.1 The Field in Outline and Its Sources

This section identifies the material and the literature. Its objective is to fix the division of the field and to list the scholarship with its dates.

The material treated is the sounding practice of Shinto shrine ritual, comprising the recitation of liturgical addresses (*norito*, 祝詞) and the performances designated *kagura* (神楽). The field divides into court practice (*mikagura*, 御神楽), maintained by the imperial establishment and at certain major shrines, and the very large body of local practices designated collectively *sato-kagura* (里神楽).

The typological framework for the field was established by Honda Yasuji (本田安次, 1906–2001), whose classifications of the mid-1960s remain the reference point for the study of the local traditions. Musical structure in *kagura* has been treated comparatively by János Kárpáti.¹

A recent contribution bears on the historical relation between the court and local strata and is treated in Section 10.²

¹Honda Yasuji's studies are collected as *Honda Yasuji chosakushū: Nihon no dentō geinō*, 20 vols. (Tokyo: Kinseisha, 1993–2000), of which the volumes on 神楽 open the series; his earlier monograph *Shimotsuki kagura no kenkyū* (1954) sets out the classification in its original form. For a comparative treatment in a Western language see János Kárpáti, "Typology of Musical Structures in the Japanese Shintō Ritual Kagura," *Asian Music* 39, no. 2 (2008).

²Fabio Rambelli, "Gagaku in Medieval Japanese Religion," *Religions* 13, no. 7 (2022): 582, DOI 10.3390/rel13070582.

18.2 The Textual and Normative Layer

This section identifies the verbal material and the prescriptive apparatus. Its objective is to distinguish the classes of text and to characterise their delivery.

The verbal material comprises liturgical addresses delivered by priests, whose forms are transmitted in written collections, and the song texts of the *kagura* repertoires. The addresses are delivered in a manner the scholarship characterises as comparatively plain when set beside the song repertoires, with limited melodic differentiation.

The prescriptive apparatus governs the sequence of shrine ritual, the purifications preceding it, the offerings and their disposition. The sounding elements are placed within that sequence.

18.3 Material Provision

This section describes the sounding implements and the setting.

The court repertoire employs wooden clappers (*shakubyōshi*, 笏拍子), a double reed (*hichiriki*, 篳篥), a flute of the *kagura* type, and a six-stringed zither (*wagon*, 和琴). The local traditions employ drums of several types, flutes, and the hand-held bell-tree (*kagura-suzu*, 神楽鈴) carried in dance.

The setting distinguishes the strata as much as the instrumentarium does. Court performance takes place within the precincts of the imperial establishment and of major shrines. Local performance takes place in shrine precincts, on temporary stages, and in village settings, and in a number of traditions extends through the night.

18.4 Bodily Practice

This section describes delivery and movement.

Vocal delivery in the court repertoire is by unison male chorus. Movement is central to the tradition in a degree exceeding most of the traditions treated in Part III: dance is a constitutive element of *kagura* in both strata, performed in the court repertoire by designated personnel and in local traditions by a wide range of participants, and the bell-tree is an implement carried and sounded in the dance itself.

The coupling of sounding to movement through a hand-held implement is worth marking. Where a dancer carries a sounding object, the sounding is generated by the movement, and the temporal organisation of the sound and of the body are one organisation.

18.5 Temporal Organisation

This section describes temporal organisation.

The court repertoire is delivered in unison, with the clappers supplying articulation. Local traditions vary widely, and drum patterns organise the pacing in many of them, with dance figures coordinated to those patterns.

The all-night performances maintained in certain local traditions introduce a temporal scale exceeding that of most rites treated in Part III, and the organisation of a sequence extending through a night is a matter on which the local traditions differ.

18.6 Social Organisation and the Division of Ritual Labour

This section describes the positions.

Positions comprise the priest, who delivers the liturgical addresses; the shrine attendant (*miko*, 巫女), who performs dances in a number of traditions; and, in the local traditions, villagers who hold performing roles by household, by rotation or by acquired competence. The court repertoire is maintained by hereditary and appointed musicians of the establishment.

The contrast in the constitution of the performing body is the tradition's most notable internal feature for the argument of this book. One stratum assigns performance to a professional establishment; the other distributes it across a community whose members hold roles by residence and inheritance.

18.7 The Relations Enacted

This section reports the relational commitments in the tradition's own terms.

Along the axis of relations to the non-human world, the tradition's commitments are prominent. The addressees of shrine ritual are associated with places, features of landscape, natural forces and seasons, and the calendar of shrine observance is keyed to the agricultural year. Among the traditions of Part III this is the case in which the second axis of Chapter 11 carries the greatest weight relative to the others.

Along the axis of relations among human persons, local performance constitutes the community of a place, with participation organised by residence and household, and the occasion recurring annually.

Along the axis of relations to the dead and to predecessors, practice varies across traditions and the tradition's articulations differ from those of the traditions treated in Chapters 15 to 17.

Along the fourth axis, the tradition articulates relations to addressees whose character differs from that posited in the theistic traditions treated later in this Part. The point is recorded because the analytic heading of Chapter 11 covers whatever a tradition holds to exceed the individual subject, with the content supplied by the tradition; the content here is supplied differently.

18.8 Degree of Musical Elaboration

This section places the tradition on the scale of Chapter 12.

The range is wide and the two strata occupy different positions within it. The liturgical addresses approach the lower limit. The court repertoire deploys a small instrumental ensemble with unison vocal delivery. The local traditions vary from modest drum-and-flute accompaniment of dance to extended nocturnal sequences.

What is distinctive in this tradition is that elaboration is carried substantially by the coupling of sound to movement. Measured on the criteria of Definition 12.2 the sounding organisation is often modest; measured as a coupled organisation of sound and body it is not.

Claim 18.8.1. (Elaboration carried by the coupling of sound and movement). *In traditions where sounding implements are carried and sounded by dancers, the elaboration of the performance resides in the coupled organisation of sound and movement, and a measure applied to the sounding organisation alone understates it.*

The claim identifies a limit of the measure adopted in Definition 12.2 and is carried to Chapter 25, where its consequences for the comparative reading are treated.

18.9 The Relational Architecture and the Operation of Relations Within It

This section applies the criterion of operation.

Relations governing conduct comprise the assignment of performing roles by residence, household and office; the calendrical placement of observance; and the association of particular repertoires with particular shrines and occasions.

One relation is operative in the internal sense, through the coupling identified in Section 4. Where the sounding is generated by a dancer's movement, the organisation of the sound is determined by the organisation of the movement, and the movement is prescribed by the rite. The channel resembles that established in Chapter 14 in running through a physical condition of performance.

18.10 Variation and the Contested Relation Between the Strata

This section treats variation and reports a contested question. Its objective is to present the competing scholarly positions on the historical relation between the strata, in accordance with the discipline stated in the front matter, and to leave the question open.

Variation among the local traditions is very large, and Honda's typologies were constructed to organise it.

The contested question concerns the relation between the strata. One view, long current, treats the local festival traditions as the older stratum, from which court practice derives or which court practice overlays. A recent contribution argues against that view, holding that

the court and temple repertoires of *gagaku* and *bugaku* were central to shrine and temple ritual in the medieval period and had spread to the provinces by the end of the Heian period, so that the direction of influence runs at least in part from the centre outward. The positions are recorded here with their proponents, and the question is left open. Its bearing on the argument of this book is direct: the two positions assign opposite directions to the transmission mechanism identified in Chapter 14, and a resolution would discriminate between them in this case.

18.11 Results and Their Limits

The chapter establishes three results. The tradition's practice divides between a court establishment and a large body of local traditions whose performing bodies are constituted differently, one professional and appointed, the other distributed across a community by residence and household. Elaboration in this tradition is carried substantially by the coupling of sound to movement, which identifies a limit in the measure of Definition 12.2. The relations articulated along the axis of the non-human world carry greater weight here relative to the other axes than in any other tradition treated in Part III.

Three limits are recorded. A portion of the court repertoire is designated restricted by the institutions maintaining it; in accordance with Requirement 13.3 that material is described here only as to the existence of the restriction. The historical relation between the court and local strata is contested and is left open. Bibliographic details of two items relied upon stand on the verification list.

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Chapter 19

Western Christian Liturgical Chant and the Contested Account of Its Transmission

This chapter treats the fifth of the eleven traditions and carries the largest scholarly controversy engaged anywhere in this book. Its role is twofold: to supply a tradition in which the relation between a written repertory and its oral transmission has been debated for half a century with the evidence set out on all sides, and to supply the point of contact between Part III and the Western historical trajectory of Part IV. It undertakes to establish three things: that the surviving notated record begins substantially later than the repertory it records, with the consequence that the earlier state of the repertory is a matter of reconstruction; that three incompatible reconstructions are current and are held by named scholars on stated evidence; and that the tradition supplies a case in which a modal classification was superimposed upon an existing repertory. It follows the template of Chapter 13.

19.1 The Field in Outline and Its Sources

This section identifies the material and the literature.

The material treated is the liturgical chant of the Latin rite in the medieval West, conventionally designated Gregorian chant, comprising the chants of the Mass and of the daily Office, together with the polyphonic elaboration that developed upon it.

The standard handbook of the field is that of David Hiley.¹ The controversy over transmission is carried in a series of articles and monographs cited in Section 19.10.

The documentary situation is the governing fact of the chapter. The earliest surviving notated sources of the repertory date from the late ninth and the tenth centuries. The repertory they record was in liturgical use earlier. Everything asserted about the state of the repertory before the notated sources is therefore reconstruction in the sense of Definition 13.2, and this chapter marks it as such throughout.

19.2 The Textual and Normative Layer

This section identifies the verbal material and the prescriptive apparatus.

¹David Hiley, *Western Plainchant: A Handbook* (Oxford: Clarendon Press, 1993).

The verbal material comprises the texts of the Mass and Office, drawn substantially from the Psalter and from other scriptural books, assigned to days and occasions by the liturgical calendar. The assignment is fixed in liturgical books, and the liturgical books constitute a prescriptive apparatus of great precision as to which text is delivered on which occasion, by whom, and in what position within the rite.

A classification of the repertory by mode was superimposed upon it, and by around the year 800 an eight-mode system was in use as an ordering principle. The dating is attested by the theoretical and liturgical sources of the period.

Claim 19.2.1. (Superimposition of a modal classification upon an existing repertory). *The eight-mode classification of the Latin liturgical repertory was applied to a body of chant already in liturgical use, so that the classification records an ordering imposed upon the repertory in the course of its transmission.*

The claim is of interest to Part IV, where the retrojection of later theoretical systems onto earlier repertories is a standing methodological hazard. Here the tradition supplies a documented instance of the imposition itself.

19.3 Material Provision

This section describes the sounding resources and the setting.

The chant is vocal and, in its liturgical performance, unaccompanied. The organ enters Western worship in the medieval period, and its admission was a matter of practice and of dispute whose history belongs to the institutional record.

The setting is the monastic and cathedral church, whose construction supplies long reverberation. The relation between building acoustics and the sung repertory is frequently remarked and is recorded here as a conjecture, since a systematic study bearing on the medieval repertory is unavailable to the present author.

19.4 Bodily Practice

This section describes delivery and its acquisition.

Delivery is by a body of singers, in the monastic case the community itself, in the cathedral case a choir with its trained boys. The repertory was acquired by memorisation over years of daily participation in the Office. The scale of the memorised repertory is substantial and is itself a datum for the transmission controversy of Section 19.10.

Procession and station form part of the liturgical action, with chants assigned to movement between stations.

19.5 Temporal Organisation

This section describes temporal organisation.

The chant of the medieval repertory is delivered without a maintained metrical pulse. Temporal organisation follows the phrase and the text, and the coordination of a body of singers is effected by common acquisition of a repertory learned together, in the manner established for a different tradition in Chapter 16.

The convergence with the Japanese case is recorded for the comparative reading of Chapter 25. Two traditions with no historical contact bearing on this feature coordinate unmetered collective delivery by the same means.

Measured organisation enters Western practice with the polyphonic repertories and the notational developments that accompany them, and the entry belongs to the historical account of Part IV.

19.6 Social Organisation and the Division of Ritual Labour

This section describes the positions.

Positions comprise the celebrant, the soloists who deliver designated chants, the choir, and, in the cathedral establishments, the boys under instruction. The establishments were provisioned institutionally, and their records supply the material conditions of performance treated in Part IV.

Transmission proceeded within establishments and across them through the movement of personnel and, from the ninth century onward, through notated books.

19.7 The Relations Enacted

This section reports the relational commitments in the tradition's own terms.

Along the axis of relations among human persons, the liturgy constitutes an assembly and differentiates it into celebrant, ministers, choir and congregation. The differentiation is prescribed in detail and governs who delivers which portion.

Along the fourth axis, the tradition articulates a relation of address to God, with the liturgy understood as an offering made by the assembly and, in the Office, as an observance recurring at fixed hours through the day and night.

Along the axis of relations to the dead, the liturgical commemoration of the departed occupies a defined place in the calendar and in the provision of foundations.

Along the axis of relations to the non-human world, the liturgical year is keyed to seasonal observance, and the temporal structure of the calendar carries that keying.

19.8 Degree of Musical Elaboration

This section places the tradition on the scale of Chapter 12.

The chant repertory itself comprises a single sounding part, with a range of melodic elaboration extending from simple recitation formulae for the psalmody of the Office to highly melismatic chants of the Mass Propers. Fixity of the sounding material is high in the notated period.

The polyphonic elaboration developing upon the chant introduces simultaneously distinguishable parts and belongs to the historical account of Part IV, where it is treated as a change in relational architecture.

19.9 The Relational Architecture and the Operation of Relations Within It

This section applies the criterion of operation.

Relations governing conduct are prescribed in unusual detail. The liturgical books determine which text is delivered, on which day, by whom, and at what point, and the differentiation of positions determines the assignment of solo and choral portions.

One relation is operative in the internal sense, and it operates through the assignment of portions. The distinction between chants assigned to a soloist and chants assigned to the choir corresponds to a distinction in melodic elaboration, with the more melismatic chants of the repertory assigned to soloists. A relational feature of the rite, namely the differentiation of positions, thereby corresponds to a feature of the internal melodic organisation.

The correspondence admits a competing explanation which must be recorded. A trained soloist can execute melodic material that a body of singers cannot execute together, so the correspondence follows from a competence condition on performance. The two explanations are compatible: the assignment of elaborate material to a soloist is at once a consequence of the differentiation of ritual positions and a consequence of what a single trained voice can do. Discriminating them would require a case in which the two come apart, and none is proposed here.

19.10 The Contested Account of the Repertory's Formation and Transmission

This section presents a scholarly controversy in accordance with the discipline stated in the front matter. Its objective is to set out the competing positions with their proponents and their evidential grounds, and to leave the question open. It proceeds by stating the question, giving three positions, and stating what the controversy establishes for this book.

The question is how the repertory recorded in the notated sources of the late ninth and tenth centuries came to be as it is, and by what means it was transmitted before those sources.

The first position holds that the repertory was substantially fixed early and transmitted faithfully, and that the evidence of the manuscript tradition supports the traditional account

of its transmission. It was argued on evidential grounds by David Hughes.²

The second position holds that the repertory as transmitted is substantially a Frankish creation of the eighth and ninth centuries, formed from the fusion of Roman and Gallican elements, and that its earlier transmission proceeded by processes closer to oral composition than to the reproduction of a fixed text. Helmut Huckle argued the historical case, and Leo Treitler developed the account of oral transmission, comparing the processes to those of oral epic and arguing that reconstructive memory and improvisation within formulaic constraint governed the transmission.³

The third position holds that an authoritative archetype of the repertory existed in the late eighth century, possibly already notated, and that the transmission thereafter was the transmission of that archetype. Kenneth Levy argued the case, and argued expressly against the continuing availability of improvisation in the ninth-century transmission.⁴ A further treatment of the emergence of the repertory in the Carolingian period is that of James McKinnon, and a monographic account is that of Hendrik van der Werf.⁵

The three positions are incompatible on the central question and each is held on stated evidence. This book takes no position among them.

What the controversy establishes for the present argument is stated here because it is substantive and does not depend on the controversy's resolution. All three positions agree that the repertory reached its documented form through a historical process extending over centuries, involving institutions of transmission, the movement of personnel, and the arrival of notation. They differ over the balance among fixation, composition and reconstruction within that process. The disagreement is therefore a disagreement about which of the mechanisms distinguished in Chapter 14 predominated, conducted on the richest documentary base available for any tradition in Part III. Chapter 25 draws on it accordingly.

19.11 Results and Their Limits

The chapter establishes three results. A modal classification was superimposed upon a repertory already in liturgical use, which supplies a documented instance of a theoretical system imposed upon existing material. Unmetered collective delivery in this tradition is coordinated by common acquisition, converging with the finding of Chapter 16 in a tradition with no relevant historical contact. The assignment of melodically elaborate chants to soloists corresponds to the differentiation of ritual positions, with a competing explanation from perfor-

²David G. Hughes, "Evidence for the Traditional View of the Transmission of Gregorian Chant," *Journal of the American Musicological Society* 40 (1987): 377–404.

³Helmut Huckle, "Toward a New Historical View of Gregorian Chant," *Journal of the American Musicological Society* 33 (1980): 437–467; Leo Treitler, "Homer and Gregory: The Transmission of Epic Poetry and Plainchant," *Musical Quarterly* 60 (1974): 333–372, and "'Centonate' Chant: Übles Flickwerk or E pluribus unus?" *Journal of the American Musicological Society* 28 (1975).

⁴Kenneth Levy, *Gregorian Chant and the Carolingians* (Princeton: Princeton University Press, 1998); "Charlemagne's Archetype of Gregorian Chant," *Journal of the American Musicological Society* 40 (1987): 1–30.

⁵James McKinnon, "The Emergence of Gregorian Chant in the Carolingian Era," in McKinnon, ed., *Antiquity and the Middle Ages: From Ancient Greece to the 15th Century* (London: Macmillan, 1990), 88–119; Hendrik van der Werf, *The Emergence of Gregorian Chant* (Rochester, NY: published by the author, 1983).

mance competence which the evidence here does not exclude.

Three limits are recorded. The notated record begins substantially later than the repertory it records, so that all statements about the earlier state of the repertory are reconstructions. Three incompatible reconstructions are current and this book adopts none. The correspondence between position and melodic elaboration admits a competing explanation which is not excluded here.

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Chapter 20

Eastern Christian Liturgical Music and the Consequences of an Instrumental Prohibition

This chapter treats the sixth of the eleven traditions and supplies the second of the two cases in which a normative restriction places the whole of a tradition's sounding organisation in the voice. Its role is to permit the comparison that Chapter 25 requires: two traditions excluding instruments on different grounds, so that the question may be put whether the same restriction produces the same sounding consequence. It undertakes to establish three things: that the exclusion is maintained on grounds internal to the tradition and distinct from those recorded in Chapter 21; that the tradition's principal branches answer the resulting problem of vocal texture in divergent ways, one adopting a sustained supporting voice and another proceeding in unison; and that the tradition's notational history includes a documented reform whose effect on the transmitted repertory is a matter for careful statement. It follows the template of Chapter 13.

20.1 The Field in Outline and Its Sources

This section identifies the material.

The material treated is the liturgical music of the Eastern Christian traditions, principally the Byzantine tradition of the Greek-speaking churches and those adopting its practice, and the Slavonic tradition designated *znamenny*. Reference is made to the Georgian tradition where its divergence is relevant.

The standard survey remains that of Egon Wellesz, and the current handbook of the notation is that of Christian Troelsgård; for the Slavonic tradition the standard English-language works are those of Johann von Gardner and Vladimir Morosan.¹

The historical account of the Byzantine tradition is conventionally organised around three figures: John of Damascus, of the late seventh and early eighth centuries, to whom the eight-

¹Egon Wellesz, *A History of Byzantine Music and Hymnography*, 2nd ed. rev. (Oxford: Clarendon Press, 1961); Christian Troelsgård, *Byzantine Neumes: A New Introduction to the Middle Byzantine Musical Notation*, *Monumenta Musicae Byzantinae Subsidia* 9 (Copenhagen: Museum Tusculanum Press, 2011); Johann von Gardner, *Russian Church Singing*, trans. and ed. Vladimir Morosan, 2 vols. (Crestwood, NY: St Vladimir's Seminary Press, 1980–2000); Vladimir Morosan, *Choral Performance in Pre-Revolutionary Russia* (Ann Arbor: UMI Research Press, 1986). Work by Dimitri Conomos and Alexander Lingas carries the current scholarship.

mode system is traditionally credited; John Koukouzeles, of the thirteenth and fourteenth centuries, associated with the elaboration of the tradition's forms; and Chrysanthos of Madytos, of the late eighteenth and early nineteenth centuries, whose reformed notation was introduced from 1814 and governs the living tradition. The traditional credit given to the first is reported here as a tradition-internal ascription.

20.2 The Textual and Normative Layer

This section identifies the verbal material, the modal system and the notation.

The verbal material comprises the hymnographic corpus of the Eastern liturgical books, assigned to occasions by an ordering apparatus. The corpus is fixed and transmitted in written form.

The modal system, designated *octoechos* in Greek and by a corresponding term in Slavonic, organises the repertory into eight modal categories cycling through the liturgical weeks. The system supplies both a classification of melodic material and a rotational principle governing the assignment of material to occasions.

Byzantine notation is neumatic and indicates melodic movement relative to a reference degree, together with the cadential structure and the accentuation of the delivery. Its intervallic content is organised by genus, and the intervals employed lie outside the divisions of an equal-tempered keyboard, so that transcription into staff notation misrepresents them. The point is recorded because it bears on the comparative measure of Definition 12.2: a tradition may employ pitch distinctions finer than a transcription can record.

Slavonic *znamenny* notation employs a distinct system of signs, and the repertory is organised by melodic formulae which the tradition names.

20.3 Material Provision

This section treats the material dimension and the exclusion of instruments.

Instruments are excluded from the liturgical practice of these traditions. The grounds maintained within the tradition differ from those recorded in Chapter 21: they concern the character of Christian worship as the offering of the human voice, and the traditions' understanding of their own inherited practice. The grounds are reported here as the traditions' own and are not adjudicated.

The comparison with Chapter 21 is therefore available on the terms the argument requires. Two traditions exclude instruments; the normative rationales differ; the consequence for sounding organisation may accordingly be examined without the rationale being held constant.

The setting is the church building, whose domed construction in the Byzantine tradition supplies long reverberation. The relation between that acoustic and the tradition's sustained vocal practice is frequently remarked and is recorded here as a conjecture.

20.4 Bodily Practice

This section describes delivery.

Delivery is vocal throughout. In the Greek and post-Byzantine practice, a melodic line is delivered above a sustained supporting voice, the *ison*, held by a portion of the singers. The practice yields two simultaneously distinguishable sounding components produced by voices alone.

In Slavonic *znamenny* practice as historically maintained, delivery proceeds in unison without a sustained supporting voice.

Standing and movement, including veneration at prescribed points, form part of the liturgical action, and services of considerable duration are performed standing.

20.5 Temporal Organisation

This section describes temporal organisation.

Delivery proceeds without a maintained metrical pulse, governed by the text and by the melodic formulae of the mode. Coordination of the singers is effected by a leading singer together with common acquisition of the repertory, converging with the findings of Chapters 16 and 19.

The vigil services of the tradition extend over long durations, and the modal cycle distributes material across the weeks of the liturgical year, so that the temporal organisation operates at scales from the phrase to the year.

20.6 Social Organisation and the Division of Ritual Labour

This section describes the positions.

Positions comprise the clergy, the cantor or protopsaltis who leads the singing, the singers who deliver the melodic line and those who hold the sustained voice, and the congregation. Assignment of the sustained voice is a division within the singing body itself, and is worth marking because it is a differentiation of function without a differentiation of instrument.

Transmission proceeds through instruction and through the notated books, with the notational reform of the early nineteenth century supplying a documented instrument of propagation.

20.7 The Relations Enacted

This section reports the relational commitments in the tradition's own terms.

Along the axis of relations among human persons, the liturgy constitutes an assembly and differentiates it into clergy, singers and congregation.

Along the fourth axis, the tradition articulates a relation of address and offering, and understands the liturgy as a participation of the earthly assembly in a worship held to be continuing.

Along the axis of relations to the dead, commemoration of the departed occupies a defined place in the services and in the calendar.

Along the axis of relations to the non-human world, the liturgical year is keyed to seasonal observance.

20.8 Degree of Musical Elaboration

This section places the tradition on the scale of Chapter 12, and draws the comparison the chapter exists to supply.

Measured on the first criterion of Definition 12.2, concerning simultaneously distinguishable parts, the Greek practice registers two, and the Slavonic practice as historically maintained registers one. Measured on the second criterion, concerning the range of distinctions employed, both traditions register high, and the Byzantine tradition registers higher than a staff transcription would indicate, for the reason given in Section 2. Measured on the third criterion, concerning fixity, both register high.

The comparison with Chapter 21 may now be stated. Both traditions exclude instruments. One places its entire sounding organisation in a single voice delivering a text whose syntactic division the notation encodes. The other, in its Greek branch, divides its singing body into a melodic component and a sustained supporting component, and in its Slavonic branch proceeds in unison.

Claim 20.8.1. (Divergence of vocal solution under a common instrumental exclusion). *Traditions excluding instruments from their liturgical practice adopt divergent solutions to the organisation of vocal texture, including single-voice delivery, unison delivery and delivery above a sustained supporting voice, so that the exclusion underdetermines the resulting sounding organisation.*

The claim is the chapter's contribution to the argument of Part III. It parallels, on the axis of material restriction, the result obtained on the axis of doctrine in Chapters 14 and 17: a shared constraint underdetermines the sounding organisation that arises under it.

20.9 The Relational Architecture and the Operation of Relations Within It

This section applies the criterion of operation.

Relations governing conduct comprise the exclusion of instruments, the differentiation of clerical, cantorial and congregational positions, and the calendrical assignment of material through the modal cycle.

One relation is operative within the internal sounding organisation. The exclusion of instruments, a normative commitment concerning the proper offering of worship, determines

that every sounding distinction the tradition makes is a vocal distinction. The consequence reaches the internal organisation: a sustained component that other traditions assign to an instrument is here assigned to a portion of the singers, which is a differentiation within the human assembly produced by a normative restriction on material.

The result is worth stating in general form, since it recurs in Chapter 25: a restriction on material resource is discharged by a differentiation of function within the assembly.

20.10 Variation Across Branches and the Notational Reform

This section treats variation and reports a contested matter.

Variation across national churches is substantial, and the divergence between the Greek and Slavonic branches on the question of the sustained voice is the principal instance for this book.

Two contested matters are recorded and left open. The first concerns continuity across the notational reform introduced from 1814. One position holds that the older notation recorded in abbreviated form what was always sung, so that the reform wrote out analytically an unchanged practice; the position is that of the reformers themselves and is maintained in subsequent scholarship of the tradition. A second holds that a later manner of realisation was fixed and generalised at the reform, so that the transmitted repertory was altered in the act of being written down.² This book reports the continuity claim as a claim and leaves the question open, in accordance with the discipline stated in the front matter.

The second concerns the sustained supporting voice. The scholarship holds the medieval Byzantine repertory to have been delivered without it, the earliest external notice of the practice dating from the later sixteenth century, and its origin is disputed.³ Its recent introduction into Slavonic practice is contested on the ground that the Slavonic repertory is organised on principles that do not presuppose it, and the Slavonic tradition is described in the standard works as historically delivered in unison. The dispute is reported and not adjudicated. It is of interest to this book as a contemporary instance of the propagation mechanism identified in Chapter 14, observable while it is occurring.

20.11 Results and Their Limits

The chapter establishes three results. The exclusion of instruments is maintained here on grounds internal to the tradition and distinct from those recorded in Chapter 21, which permits the comparison the argument requires. Traditions excluding instruments adopt divergent solutions to the organisation of vocal texture, so that the exclusion underdetermines the sounding organisation arising under it. A restriction on material resource is discharged in

²Proponents of the first position include Chrysanthos himself and, in the twentieth century, Konstantinos Psachos and Gregorios Stathis; the second is argued by Alexander Lingas among others. Kaiti Romanou's study of the reform surveys the question.

³The dating and the dispute over origin are treated in Wellesz, Conomos and Troelsgård; the earliest external notice is commonly attributed to the traveller Martin Crusius.

this tradition by a differentiation of function within the assembly, which is a relation operative within the internal sounding organisation.

Three limits are recorded. The relation of present practice to earlier practice is affected by a documented notational reform of the early nineteenth century, and the continuity claim is reported as a claim. The contemporary dispute over the sustained voice in Slavonic practice is reported and not adjudicated. The intervallic content of the Byzantine tradition lies outside the divisions a staff transcription records, so that comparative measures drawn from transcriptions understate the distinctions the tradition employs.

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Chapter 21

Jewish Cantillation and the Divergent Realisation of a Shared Notation

This chapter carries the third of the controlled comparisons assembled in Chapter 26, and it is the cleanest of the three. Its role is to exhibit a case in which a verbal text and a system of written signs governing its delivery are both fixed and shared across communities, while the sounding realisation of those signs differs materially among them. It undertakes to establish four things: that the notational system performs three distinct functions of which the melodic function is one; that the system is shared across communities whose realisations diverge; that the divergence is therefore attributable to factors other than the text and its notation; and that the tradition's restriction of instruments places the whole of its sounding practice in the voice. It follows the template of Chapter 13.

21.1 The Field in Outline and Its Sources

This section identifies the material and the literature. Its objective is to fix the extent of the case and to date the sources. It proceeds by naming the practice, identifying the communities compared, and listing the scholarship.

The material treated is the cantillated public reading of the Hebrew Bible in synagogue worship, together with the associated liturgical chant. The reading is governed by a system of written signs, the *te'amim* or accents of the biblical text, belonging to the Tiberian apparatus of vocalisation and accentuation.

The communities whose realisations are compared are those conventionally distinguished as Ashkenazi, Sephardi, Mizrahi and Yemenite, together with regional traditions within each. The comparison operates on their realisations of the same signs applied to the same consonantal text.

The comparative study of these traditions was established by Abraham Zvi Idelsohn, whose multi-volume thesaurus of Hebrew and Oriental melodies appeared between 1914 and 1932, and whose historical study of 1929 set out the framework.¹ Subsequent scholarship includes

¹Abraham Zvi Idelsohn, *Hebräisch-orientalischer Melodienschatz*, 10 vols. (1914–1932); *Jewish Music in Its Historical Development* (New York: Henry Holt, 1929). Which volumes of the thesaurus bear directly on cantillation stands on the verification list.

the work of Israel Adler and Avigdor Herzog and the research programme of the Jewish Music Research Centre at the Hebrew University of Jerusalem; Simcha Kogut has treated the relation between the accents and rabbinic exegesis; Judit Frigyesi has treated Eastern Ashkenazi practice with attention to the fusion of melodic and speech elements.

21.2 The Textual and Normative Layer

This section identifies the text and the notational system. Its objective is to establish the fixity of both and to set out the three functions the notation performs. It proceeds by treating the text, the dating of the system, and the three functions.

The consonantal text of the Hebrew Bible is fixed and its transmission is governed by an elaborate apparatus of scribal control. The signs governing its delivery belong to the Tiberian system of vocalisation and accentuation, developed in the centuries around the ninth and accepted across communities in the centuries following.

The dating carries a consequence which the argument requires. The signs postdate the composition of the texts they annotate by a long interval. They record, and stabilise, a practice of delivery obtaining at the time of their development, and they do not supply access to earlier delivery.

The system performs three functions simultaneously, and the simultaneity is its distinctive feature.

Claim 21.2.1. (Threefold function of the accent system). *The accents of the biblical text mark the position of stress within the word, articulate the syntactic division of the verse through a hierarchy of disjunctive and conjunctive signs, and indicate the melodic figure with which the word is delivered.*

The second function warrants emphasis for the argument of this book. The signs divide each verse into constituents and subdivide the constituents in turn, so that the delivery of a verse enacts a syntactic analysis of it. Kogut's work treats the relation between that analysis and the exegetical tradition. The system therefore couples melodic delivery to a determinate reading of the text.

A restriction internal to the system may be noted. Three of the books of the biblical corpus carry a distinct set of accents, and for these the Ashkenazi tradition preserves no melody for public reading.

21.3 Material Provision

This section treats the material dimension. Its objective is to establish that the tradition's sounding practice is placed wholly in the voice by a normative restriction, and to identify the one instrument retained. It proceeds by stating the restriction as the tradition states it, identifying the exception, and noting the modern controversy.

Instrumental music has been excluded from synagogue worship in the traditions treated

here. The reasoning given within the tradition connects the exclusion to mourning for the destruction of the Temple and, for the Sabbath and festivals, to the prohibitions governing those days. The reasoning is reported here as the tradition's own and is not adjudicated.

The exception is the *shofar*, a horn sounded on specified occasions in the liturgical year. Its sounding is prescribed and its sounds are specified by the tradition. It supplies no melodic material.

The consequence for the present argument is direct. Where instruments are excluded, the whole of a tradition's sounding organisation is realised in the voice, and every distinction the tradition makes in sound is a distinction of vocal delivery. The case accordingly isolates vocal realisation from instrumental resource, and Chapter 20 supplies a second case with the same property under a different normative rationale.

A modern controversy is recorded for completeness. The introduction of the organ into worship by early Reform congregations in the nineteenth century was contested within the wider community, and the contest concerned precisely the normative status of the exclusion. The controversy is reported as a matter of the tradition's internal history and is not adjudicated here.

21.4 Bodily Practice

This section describes the delivery. Its objective is to characterise the reading act and the mode of acquisition. It proceeds by treating the act, the scroll, and acquisition.

The public reading is performed by a designated reader from a scroll which carries the consonantal text alone, without vocalisation or accents. The reader has therefore memorised the vocalisation and the accentuation, and delivers from a text that supplies neither. The signs are learned from printed editions and reproduced in delivery from memory.

The arrangement is unusual among the traditions treated in Part III and is worth marking. A notation exists, is authoritative, and is absent from the object used in performance. The notational system operates as an instrument of learning and of stabilisation, and the performance is executed without it.

Acquisition proceeds through instruction, commonly in preparation for a first public reading, and through participation in a community whose realisation of the signs the learner acquires.

21.5 Temporal Organisation

This section describes temporal organisation. Its objective is to establish that the delivery is governed by the text and its syntactic division, with no maintained pulse. It proceeds by characterising the organisation and stating the comparative observation.

Delivery proceeds without a maintained metrical pulse. The duration of the melodic figures is governed by the words to which they attach and by the position of the word within

the syntactic hierarchy the accents encode. Figures marking a major division are extended; figures marking a minor one are brief.

The organisation is therefore text-governed in a strong sense: the temporal shape of the delivery is a function of the syntactic structure of the sentence being delivered. Among the traditions of Part III this is the clearest case of a sounding organisation whose temporal structure is determined by the verbal material.

The reading is executed by a single voice. The coordination problem treated in Chapters 14 to 16 accordingly does not arise for the reading itself, though it arises for the congregational portions of the liturgy.

21.6 Social Organisation and the Division of Ritual Labour

This section describes the positions. Its objective is to identify them and to characterise transmission.

The positions comprise the reader of the biblical text, the precentor who leads liturgical prayer, and the congregation. Eligibility for public reading is governed by the community's norms and by acquired competence.

Transmission is by community. A learner acquires the realisation used by the community in which the learning takes place, and the realisations are identified by community. The identification is the tradition's own, and it parallels the identification of a *yun* by its lineage in Chapter 14.

21.7 The Relations Enacted

This section reports the relational commitments in the tradition's own terms, along the four axes of Chapter 11.

Along the axis of relations among human persons, the public reading constitutes the congregation as the assembly before which the text is read, and requires a quorum for its performance. The reading is an act performed for and before a community.

Along the axis of relations to the dead and to those who preceded, the reading enacts a relation to a chain of transmission, and the annual cycle of readings repeats that enactment at fixed intervals.

Along the fourth axis, the tradition holds the text read to be revealed, and the public reading is among the acts by which the community stands in relation to it.

Along the axis of relations to the non-human world, the liturgical year is keyed to agricultural and seasonal occasions, and the readings and their associated melodic usages follow that keying.

21.8 Degree of Musical Elaboration

This section places the tradition on the scale of Chapter 12.

Measured on the criteria of Definition 12.2, the practice comprises a single sounding part; employs a moderate range of pitch distinctions with durational distinction governed by the text; and exhibits high fixity of the sounding material, since the melodic figures are determinate for each sign within a community's tradition and are transmitted as such.

The profile resembles that of Chapter 16 in comprising one part with high fixity, and differs from it in that the melodic figures here attach to signs which encode a syntactic analysis, so that the sounding material is indexed to the text at the level of the word.

21.9 The Relational Architecture and the Operation of Relations Within It

This section applies the criterion of operation.

Relations governing conduct comprise the quorum requirement, the eligibility criteria for public reading, and the calendrical assignment of readings.

One relation is operative within the internal sounding organisation, and the case is unusually clear. The tradition's commitment to a determinate reading of the text, understood as its correct division into syntactic constituents, is encoded in the accent system, and the accent system determines the melodic figures and their extension. A relation between the community and the text, namely that the text has a correct articulation which the reading must convey, therefore governs the temporal and melodic organisation of the sounding at the level of the word.

Claim 21.9.1. (Operation of an exegetical commitment within melodic organisation). *Where a notational system encodes the syntactic division of a text and simultaneously determines the melodic figures of its delivery, the tradition's commitment to a determinate articulation of the text is operative within the internal melodic and temporal organisation of the sounding.*

The claim is the strongest instance in Part III of a relation operative in the internal sense, and it is worth stating why. The channel is neither a physical requirement of collective sounding, as in Chapter 14, nor an institutional condition of common acquisition, as in Chapter 16. It is a commitment about the text, encoded in a notational system, issuing directly in melodic determination.

21.10 Variation Across Communities and Periods

This section presents the comparison. Its objective is to establish that a shared notational system receives divergent melodic realisations across communities, and to state what the divergence is and is not explained by. It proceeds by stating the design, reporting the divergence, and drawing the consequence.

The design of the comparison is the tightest available in Part III. The consonantal text is identical across the communities compared. The system of signs is identical. The functions the signs perform are identical. What differs is the melodic figure assigned to a given sign.

The divergence is substantial. The realisations of the Ashkenazi, Sephardi, Mizrahi and Yemenite traditions differ from one another such that a reading in one is not recognisable as the same melodic material by a hearer trained in another, and further divergence obtains among regional traditions within each. Certain communities of the Ottoman and Middle Eastern spheres realise the reading within the modal system of the surrounding musical culture.

Claim 21.10.1. (Divergence of realisation under an identical notation). *Where communities share an identical text and an identical system of signs governing its delivery, and assign materially different melodic figures to those signs, the divergence of realisation is unexplained by the text or by the notation.*

The consequence for the argument of Part III is that the three mechanisms separated in Chapter 14 may be assessed here under the most favourable conditions. The text is fixed by scribal control; the notation is fixed by acceptance across communities; the doctrinal commitment encoded in the notation is shared. What varies alongside the melodic realisation is the geographical location of the community, the surrounding musical culture, and the line of transmission. The observation that certain communities realise the reading within the modal system of their surrounding musical culture bears directly on the second mechanism identified in Chapter 14, and supplies the clearest evidence available in Part III that the sounding environment of a community enters its liturgical realisation.

A limit on the inference is recorded. The communities compared were separated over long periods, so that transmission and environment covary: a community distant in transmission is generally also distant in location and in surrounding musical culture. Discriminating the two mechanisms requires cases in which they come apart, and Chapter 26 treats what such cases would look like.

21.11 Results and Their Limits

This section states what the chapter establishes and what it leaves undetermined.

The chapter establishes four results. The accent system performs three functions at once, marking stress, encoding a syntactic division of the verse, and determining a melodic figure. A commitment of the tradition concerning the correct articulation of its text is thereby operative within the internal melodic and temporal organisation of the sounding, which is the strongest such instance in Part III. Communities sharing an identical text and an identical notation assign materially different melodic figures to the signs, so that the divergence of realisation is unexplained by the text or the notation. The normative exclusion of instruments places the whole of the tradition's sounding organisation in the voice, which isolates vocal realisation from instrumental resource.

Three limits are recorded. The accent system postdates the texts it annotates by a long

interval and supplies no access to earlier delivery. Transmission and environment covary across the communities compared, so that the two mechanisms cannot be discriminated from this case alone. The bibliographic question of which volumes of the principal thesaurus bear on cantillation stands on the verification list.

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Chapter 22

Qur'anic Recitation and the Tradition's Own Classification of Its Sounding Practice

This chapter treats the seventh of the eleven traditions and raises a question that no preceding chapter has raised. Its role is to examine a case in which the tradition itself declines to classify its sounding practice under the category that this book has been applying, and to draw the methodological consequence. It undertakes to establish three things: that the tradition's regulation of delivery is codified in a body of rules governing phonetic realisation and duration; that the tradition maintains an internal debate concerning the propriety of melodic elaboration, whose positions are held on stated grounds within the tradition; and that the analytic category of music, applied from outside, obscures a distinction the tradition makes and requires. It follows the template of Chapter 13, with the ninth heading expanded to accommodate the category question.

Two matters of procedure govern the chapter. The internal debate is reported with the positions and their grounds, and is not adjudicated; this book takes no position on any question of Islamic law or theology. Where the tradition's own terminology differs from the analytic vocabulary used elsewhere in this book, the tradition's terminology is used.

22.1 The Field in Outline and Its Sources

This section identifies the material and the literature.

The material treated is the recitation of the Qur'an, together with the call to prayer. The principal study in English is that of Kristina Nelson, which treats recitation as an oral practice governed by a codified body of rules.¹ A complementary treatment of recitation as oral performance and transmission is that of Frederick M. Denny.²

22.2 The Textual and Normative Layer

This section identifies the text and the rules governing its delivery.

¹Kristina Nelson, *The Art of Reciting the Qur'an* (Austin: University of Texas Press, 1985; reprinted Cairo: American University in Cairo Press, 2001).

²Frederick M. Denny, "Qur'ān Recitation: A Tradition of Oral Performance and Transmission," *Oral Tradition* 4, nos. 1–2 (1989).

The text is fixed, and its transmission is governed by an apparatus of scribal and oral control of exceptional rigour, including certified chains of transmission through which a reciter's competence is authorised.

Delivery is regulated by a codified body of rules designated *tajwīd*. The rules govern the articulation of consonants and vowels, the assimilations and modifications occurring at particular junctures, the durations assigned to prolonged vowels, and the permissible points at which delivery may pause. The regulation is therefore phonetic and durational, and it is prescriptive in a degree exceeding any other tradition treated in Part III.

Claim 22.2.1. (Codified regulation of phonetic and durational realisation). *Delivery of the Qur'anic text is governed by a codified body of rules specifying articulation, assimilation, duration and the permissible points of pause, so that the temporal organisation of the delivery is prescribed by a normative apparatus distinct from any melodic specification.*

The claim identifies a configuration absent from the preceding chapters. The traditions of Chapters 14 to 20 regulate the text, regulate the occasion, and leave the temporal detail of delivery to transmitted practice or to notation. Here the temporal detail is itself the object of codified prescription, and melodic content is regulated separately and by other means.

22.3 Material Provision

This section treats the material dimension.

The practice is vocal and unaccompanied. The setting includes the mosque and, for the call to prayer, the position from which it is delivered, in the modern period commonly with electronic amplification. The introduction of amplification altered the spatial reach of the call and is recorded here as a documented material change bearing on the relations treated in Section 7.

22.4 Bodily Practice

This section describes delivery and its acquisition.

Delivery is regulated by the rules described in Section 2, whose observance requires extended training in articulation and breath control. Acquisition proceeds by instruction from a certified teacher, with the certification recording the chain through which competence has been transmitted. Memorisation of the text is a distinct attainment, undertaken by many and completed by a smaller number.

Two manners of delivery are distinguished within the tradition. One proceeds in a measured and comparatively plain manner. The other is melodically elaborated and draws upon the modal system of Arab musical practice. Both observe the rules of *tajwīd*.

22.5 Temporal Organisation

This section describes temporal organisation.

Temporal organisation follows from the rules of Section 2 together with the reciter's disposition of breath and pause. There is no maintained metrical pulse. The durations of prolonged vowels are prescribed in units, and the prescription supplies a determinate relative duration that a reciter observes.

The configuration is worth marking against the comparative reading of Chapter 25. Here a tradition prescribes relative durations numerically without prescribing melody, which inverts the arrangement found in Chapter 21, where a notation prescribes melodic figures whose durations follow from the text's syntactic division.

22.6 Social Organisation and the Division of Labour

This section describes the positions.

Positions comprise the reciter, the person who delivers the call to prayer, the prayer leader, and the assembly. Eligibility rests upon competence and, for professional recitation, upon certification. The assembly performs its prayer in alignment, with the coordination of posture and movement effected by following the leader.

22.7 The Relations Enacted

This section reports the relational commitments in the tradition's own terms.

Along the fourth axis, the tradition holds the text recited to be revealed and to be the speech of God, and recitation is accordingly understood as the human voicing of that speech. The commitment bears directly on the debate reported in Section 9, since the propriety of aesthetic elaboration is assessed against the character of what is being voiced.

Along the axis of relations among human persons, the call to prayer addresses a dispersed population and assembles it, and the prayer that follows is performed in alignment by a body whose members coordinate their posture and movement.

Along the axis of relations to time, the daily cycle of prayer times structures the day, and the observance of the month of fasting structures the year, with extended recitation forming part of the latter.

22.8 Degree of Elaboration

This section places the tradition on the scale of Chapter 12, with the qualification the tradition's own classification requires.

Measured on the criteria of Definition 12.2, the practice comprises a single sounding part; the plainer manner employs a narrow range of pitch distinction while the elaborated manner

employs a wide one; and the fixity of the sounding material is high as to duration and articulation, which are prescribed, and low as to melodic content, which the reciter shapes within the rules.

The measure is applied here with the qualification stated in Section 9. It is applied as an analytic instrument of this book and carries no implication as to the tradition's own classification of the practice.

22.9 The Tradition's Classification and the Limits of an External Category

This section reports the tradition's classification of its sounding practice and the internal debate concerning elaboration. Its objective is to set out the positions with their grounds and to state the methodological consequence for this book. It proceeds by reporting the terminological distinction, the two positions, the further contested matter of devotional audition, and the consequence.

The tradition distinguishes recitation from song. Recitation is designated by terms whose sense is reading and delivery of the revealed text; song is designated by a distinct term. The distinction is maintained by reciters and by the scholarly literature of the tradition, and it is not a distinction of degree.

Two positions are held within the tradition concerning melodic elaboration.

The first holds that measured, deliberate delivery is enjoined, that the beautifying of the voice in delivery is commended within the tradition's normative sources, and that melodic elaboration drawing on the modal system is accordingly permissible where the rules of *tajwīd* are fully observed. The position is associated with the practice of celebrated reciters and is defended in the tradition's scholarly literature by reference to its normative sources.³

The second holds that the deployment of the revealed text as an occasion for musical artistry is improper to its character, that virtuosity invites attention to the performer, and that the distinction between worship and entertainment is thereby placed at risk. The position is likewise defended by reference to the tradition's normative sources.

The two positions are held on stated grounds within the tradition and this book adjudicates neither.

A further matter is contested within the tradition and is recorded separately, since it concerns a different practice: the standing of devotional audition, including practices involving instruments, within certain Sufi traditions. Positions on the question range from acceptance of such practices as a means of devotional attention to their rejection or restriction. The dispute is reported and not adjudicated.

The methodological consequence for this book is the substantive result of the chapter.

Claim 22.9.1. (Dependence of the comparative category on the analyst's classification).

³A review of the normative sources bearing on both positions is given in Abdurrahman Çetin, "The Place of Music in Qur'anic Recitation," *American Journal of Islam and Society* 16, no. 1 (1999), DOI 10.35632/ajis.v16i1.2133.

Where a tradition maintains a distinction between its sounding practice and the category of song, and holds the distinction to be one of kind, the application of an external category of music to that practice imports a classification the tradition declines, and any comparative result stated in terms of that category records a decision of the analyst.

The claim bears on Chapter 25 and on the design of Part III as a whole. Comparative statements made in this book about sounding practice across traditions are statements framed in the analytic vocabulary of the book. Where a tradition classifies otherwise, the classification is reported, and the comparative statement is understood as the analyst's construction, carrying no report of the tradition's own categories.

22.10 Variation Across Regions and Reading Traditions

This section treats variation.

The tradition maintains multiple canonical reading traditions, differing in points of articulation and in certain readings, each transmitted through its own certified chains. Regional practice varies in the manner of delivery and in the prevalence of the elaborated manner, and the twentieth-century circulation of recordings altered the distribution of styles by making the performances of particular reciters widely available.

The last point is an instance of the propagation mechanism identified in Chapter 14, operating here through recording technology in the place held elsewhere by an institution of training.

22.11 Results and Their Limits

The chapter establishes three results. Delivery is governed by a codified body of rules prescribing articulation, assimilation, duration and pause, so that temporal organisation is the object of normative prescription while melodic content is regulated separately. The tradition maintains a distinction of kind between its sounding practice and the category of song, and maintains an internal debate concerning melodic elaboration whose positions are held on stated grounds. The application of an external category of music to such a practice imports a classification the tradition declines, with the consequence that comparative statements in this book are the analyst's constructions where they cross that classification.

Three limits are recorded. This book adjudicates no question of Islamic law or theology, and the positions reported in Section 22.9 are reported as positions. The chapter relies on a limited body of scholarship in European languages and does not engage the tradition's own extensive literature directly. One bibliographic item stands on the verification list.

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Chapter 23

Vedic Recitation and the Engineering of Exact Oral Transmission

This chapter treats the eighth of the eleven traditions and supplies the limiting case of one variable running through Part III. Its role is to exhibit a tradition whose sounding practice is organised around the requirement of exact transmission of a verbal text without writing, and whose techniques for meeting that requirement are explicit and elaborate. It undertakes to establish three things: that the tradition maintains permutational recitation formats functioning as redundancy against transmission error; that the accent system prescribes pitch as a property of the verbal text; and that a tradition may organise its sounding practice around preservation while maintaining, alongside it, elaborated melodic and devotional practices of a wholly different character. It follows the template of Chapter 13.

Two matters of procedure govern the chapter. Transmission within the orthodox tradition is restricted by criteria internal to it, and Requirement 13.3 applies. This book reports the practices of transmission and takes no position on the normative questions they raise.

23.1 The Field in Outline and Its Sources

This section identifies the material and the literature.

The material treated is the recitation of the Vedic corpus, together with the sung recitation of the Sāmaveda, and, separately, the melodically elaborated devotional practices of temple and congregational settings.

The principal Western scholarship on recitation is that of Frits Staal, whose study of the Nambudiri tradition of Kerala appeared in 1961 and whose documentation of a fire ritual appeared in 1983.¹ The principal study of the sung recitation is that of Wayne Howard.² On the branches of transmission and on oral transmission generally, the work of Louis Renou, Michael Witzel and Johannes Bronkhorst is standard.³

The tradition of recitation was inscribed by UNESCO in 2003 among the practices designated Masterpieces of the Oral and Intangible Heritage of Humanity. The designation belongs

¹Frits Staal, *Nambudiri Veda Recitation* (The Hague: Mouton, 1961); *Agni: The Vedic Ritual of the Fire Altar*, 2 vols. (Berkeley: Asian Humanities Press, 1983).

²Wayne Howard, *Sāmavedic Chant* (New Haven: Yale University Press, 1977); "Vedic Chant: Its Tradition and Transmission," *Asian Music* 15, no. 1 (1983).

³Johannes Bronkhorst, "Oral Transmission of the Sacred Literature of India," *Oral Tradition* 2. Bibliographic details for the Renou and Witzel items stand on the verification list.

to the process described in Section 13.2 of Chapter 13 and is recorded as such.

23.2 The Textual and Normative Layer

This section identifies the corpus, the accent system and the ancillary disciplines.

The corpus comprises the Vedic collections, transmitted through branches (*śākhā*) each preserving its own recension. Transmission has been oral, and the tradition maintained oral transmission as the proper mode over a very long period during which writing was available.

The accent system distinguishes three values, conventionally rendered as raised, unraised and a third arising at their junction. The values are properties of syllables of the text and are semantically consequential in the tradition's understanding, so that the pitch of delivery is fixed by the text and lies outside the reciter's choice.

Claim 23.2.1. (Prescription of pitch as a property of the verbal text). *In Vedic recitation the pitch value of a syllable is a property of the text, transmitted with it and fixed by it, so that the melodic dimension of the delivery is determined by the verbal material at the level of the syllable.*

The claim connects to Chapter 21, where a notational system likewise determines melodic realisation at the level of the word, and the two cases are compared in Chapter 25. The difference between them is that the Hebrew system assigns melodic figures whose realisation diverges across communities, while the Vedic system assigns pitch values whose preservation is the object of the transmission techniques described in Section 4.

Ancillary disciplines regulate the practice. A discipline of phonetics governs articulation, and treatises attached to particular branches specify the phonetic detail of the recension they serve.

23.3 Material Provision

This section treats the material dimension.

Recitation is vocal and unaccompanied. The ritual setting comprises the constructed ground and the fire installations, whose forms are prescribed. Instruments belong to the temple and devotional practices treated in Section 8 and stand apart from recitation.

23.4 Bodily Practice

This section describes the techniques of transmission, which constitute the tradition's most distinctive feature.

Beyond continuous recitation of the text in its ordinary sequence, and beyond word-by-word recitation, the tradition maintains permutational formats in which the words of a passage are recited in prescribed reorderings and repetitions of increasing complexity. The formats are named and are taught as distinct attainments.

The function of the formats is redundancy. A word recited in several orderings and several combinations is checked against itself, and an error in one traversal is exposed by its absence or difference in another. The tradition thereby holds the text against corruption without recourse to a written exemplar.

Claim 23.4.1. (Permutational recitation as transmission redundancy). *The permutational recitation formats of the Vedic tradition subject each word of a passage to multiple traversals in prescribed orderings, so that an error in transmission is exposed by disagreement among the traversals, and the corpus is preserved without a written exemplar.*

The claim identifies a solution to a transmission problem which no other tradition in Part III adopts. Where the traditions of Chapters 14 to 20 secure their texts by writing and leave sounding realisation to transmitted practice, this tradition secures the text by the structure of the sounding practice itself.

A consequence follows for the relation between sound and meaning in this case. Staal argued that the primary purpose of recitation, so organised, is preservation and transmission, and advanced the further and much contested position that ritual and mantra are in a certain sense without meaning, constituting rule-governed activity performed for its own sake. The further position has been widely discussed and widely contested, and it is reported here as Staal's and left open.

23.5 Temporal Organisation

This section describes temporal organisation.

Recitation proceeds without a maintained metrical pulse in the ordinary formats, with duration governed by syllabic quantity and by the prescriptions of the phonetic discipline. The permutational formats impose their own temporal shape through the prescribed pattern of repetition, so that the temporal organisation of a traversal is a consequence of the redundancy scheme.

The sung recitation of the Sāmaveda is organised differently, with syllables extended and modified in delivery, and Howard's study treats its melodic organisation.

The Nambudiri tradition of Kerala, which preserves recensions rare elsewhere, is described by Staal as more rhythmical than melodic in character. The characterisation is reported as his.

23.6 Social Organisation and the Division of Ritual Labour

This section describes the positions and the structures of transmission.

Positions in the ritual are differentiated by function, with priests of distinct specialisation attached to distinct portions of the corpus and to distinct ritual duties. The specialisation corresponds to the division of the corpus into branches.

Transmission proceeds from teacher to pupil over years, and eligibility for transmission within the orthodox tradition is restricted by criteria internal to the tradition, including criteria of lineage. The restriction is reported here without adjudication, in accordance with the procedure stated at the head of the chapter.

23.7 The Relations Enacted

This section reports the relational commitments in the tradition's own terms.

Along the fourth axis, the tradition holds the corpus to be of non-human origin, and holds exact articulation to bear upon the efficacy of ritual action. The commitment explains the weight placed upon phonetic precision: exactness is a relational demand made by the character of what is transmitted.

Along the axis of relations among human persons, the teacher-pupil relation is the institution through which the corpus persists, and its structure is prescribed.

Along the axis of relations to the non-human world, the ritual addresses fire, and the prescribed construction of the ritual ground establishes a determinate spatial relation between the participants and the offerings.

Along the axis of relations to predecessors, the tradition maintains the identity of its branch as an inheritance and the recitation as its continuation.

23.8 Degree of Musical Elaboration

This section places the practices on the scale of Chapter 12, and distinguishes two portions of the tradition's sounding practice.

Recitation of the ordinary formats comprises a single part, employs three pitch values fixed by the text, and exhibits the highest fixity of sounding material of any practice treated in Part III, since the fixity is the point of the practice.

The devotional and temple practices, including congregational singing, are of a different character: melodically elaborated, frequently metered, instrumentally accompanied, and admitting composition and variation.

Claim 23.8.1. (Coexistence of preservation-organised and elaboration-organised sounding practices). *A single religious tradition may maintain a sounding practice organised around the exact preservation of a fixed text alongside a sounding practice organised around melodic elaboration and composition, with distinct personnel, settings and criteria of correctness.*

The claim bears on the comparative reading of Chapter 25, since it establishes that a tradition need not be assigned a single position on the elaboration scale. Part III's practice of characterising a tradition by a profile is thereby shown to require qualification, and the qualification is carried forward.

23.9 The Relational Architecture and the Operation of Relations Within It

This section applies the criterion of operation.

Relations governing conduct comprise the assignment of ritual functions by branch and specialisation, the eligibility criteria governing transmission, and the prescribed construction of the ritual ground.

One relation is operative within the internal sounding organisation, and the case is as clear as that of Chapter 21. The tradition's commitment that exact articulation bears upon the efficacy of ritual action issues in the phonetic discipline and in the permutational formats, and the permutational formats determine the internal temporal and sequential organisation of a substantial portion of the sounding practice. A relational commitment concerning the character of the transmitted material thereby determines the structure of the sound.

23.10 Variation Across Branches and Regions

This section treats variation.

Variation across branches is constitutive of the tradition: the branches preserve distinct recensions, and their recitational practices differ. Regional traditions differ further, and the Kerala traditions preserve recensions rare elsewhere.

Comparison of the divergence here with that of Chapters 14 and 21 is instructive and is developed in Chapter 26. In those chapters a shared text receives divergent realisations. Here the branches transmit distinct texts, and the divergence is therefore of a different kind: textual as well as realisational. The comparison accordingly requires care and the two kinds of divergence are kept separate.

23.11 Results and Their Limits

The chapter establishes three results. The pitch of delivery is a property of the verbal text, fixed at the level of the syllable, so that the melodic dimension is determined by the verbal material. The permutational recitation formats function as redundancy against transmission error and secure the corpus without a written exemplar, which constitutes a solution to the transmission problem adopted by no other tradition in Part III and determines the internal organisation of the sounding. A single tradition maintains a preservation-organised sounding practice alongside an elaboration-organised one, which requires qualification of the practice of assigning a tradition a single position on the elaboration scale.

Three limits are recorded. Staal's further position concerning the meaninglessness of ritual and mantra is contested and is left open. Transmission within the orthodox tradition is restricted by criteria internal to it, which this book reports without adjudication. Bibliographic details of two items stand on the verification list.

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Chapter 24

Indigenous Ritual Sound and the Conditions Under Which It May Be Studied

This chapter departs from the form of the ten preceding it, and the departure is deliberate. Its role is to treat the conditions under which Indigenous ritual sounding practices may enter a comparative study of this kind, and to state the reasons this book declines to treat them as it has treated the traditions of Chapters 14 to 23. It undertakes to establish three things: that the category assembled under a heading of this sort comprises unrelated traditions whose aggregation would misdescribe each; that the ownership of songs and the restriction of repertoires are principles held by a number of these traditions and enforceable within them, so that the ordinary scholarly practice of citation and analysis is inapplicable without permission; and that the relation between the human and the other-than-human articulated in a number of these traditions bears on the argument of this book in a manner that can be indicated without appropriating the material.

The template of Chapter 13 is set aside here for the reason given in Section 24.1, and the chapter proceeds in five sections of its own.

24.1 The Aggregation Problem and the Status of the Category

This section states why the eleven-heading template is set aside. Its objective is to establish that the traditions grouped under the present heading share no property that would license a common description, and to state what follows.

The traditions that a heading of this kind assembles are related to one another by a term of external classification. They do not constitute a family in the sense that the Buddhist traditions of Chapters 15 to 17 constitute one, or the Christian traditions of Chapters 19 and 20. They differ in language, in cosmology, in social organisation, in the material of their instruments, in the structure of their transmission, and in every property along which Part III has compared traditions.

The template of Chapter 13 presupposes a single tradition whose textual layer, material provision, temporal organisation and social organisation may be described. Applied to an aggregate, it would produce a description true of nothing.

Claim 24.1.1. (Inapplicability of a common description to an externally assembled category). *A comparative description organised by a template presupposes a subject possessing the properties the template records; where a category is assembled by a term of external classification and its members share no such properties, a description organised by the template misdescribes each member.*

The consequence adopted here is that this book advances no comparative claim about Indigenous ritual sound as a class. Where a specific tradition is discussed in Chapter 25, it is named, and the discussion rests on scholarship concerning that tradition.

24.2 Ownership of Songs and the Restriction of Repertoires

This section states the principles of ownership and restriction and their consequences for scholarly use. Its objective is to establish that these principles are held and enforced within traditions, and that they govern what this book may do.

A number of traditions hold that the right to perform a given song belongs to a person, a family, a house or a clan, and that performance by others without the holder's authority constitutes an offence recognised and adjudicated within the community. The principle is a principle of law within those communities, and it is not a preference.

A number of traditions further restrict portions of their repertoire to specified persons, occasions or circumstances, so that recording, reproduction and public performance of that material are improper irrespective of the technical availability of a recording.

Requirement 24.2.1. (Governance of scholarly use by the holders' rules). *Where a tradition holds the right to perform an item to reside in a rights-holder, or restricts an item's audition or reproduction, the item is not reproduced, transcribed, analysed or quoted in this book, and the existence of the rule is recorded as the description of that portion of the tradition.*

The requirement restates Requirement 13.3 of Chapter 13 and is repeated here because its application is most extensive in this chapter.

The controversies arising where the requirement has been disregarded are documented in the scholarly literature, including cases in which material recorded from a community was subsequently incorporated into compositions performed publicly without the rights-holders' authority. The literature on repatriation of recorded material treats the consequences and the remedies.¹

24.3 The Position of Recorded Archives

This section treats the archives on which a study of this kind would otherwise draw. Its objective is to establish that the existence of a recording settles no question about its use.

¹Trevor Reed, "Reclaiming Ownership of the Indigenous Voice: The Hopi Music Repatriation Project," in Frank Gunderson, Robert C. Lancefield and Bret Woods, eds., *The Oxford Handbook of Musical Repatriation* (New York: Oxford University Press, 2019). The wider literature on intellectual property and ethnomusicological archives includes the work of Anthony Seeger.

Extensive archives of recorded Indigenous music were assembled during the nineteenth and twentieth centuries, under conditions of consent that ranged from documented agreement to none at all. The recordings exist, are catalogued, and are in many cases technically accessible.

The scholarly literature has moved substantially toward the position that accessibility settles nothing. Repatriation of recordings to source communities, negotiation of terms of access with rights-holders, and the recognition that a holding institution may possess an object without possessing rights in it are now standard concerns of the field, and the instruments through which they are addressed continue to develop. The practice of this book follows the requirement of Section 2.

24.4 The Other-Than-Human Relation and What This Book Takes From It

This section states the bearing of these traditions on the argument of this book, within the limits established above. Its objective is to indicate a relational configuration that the traditions of Chapters 14 to 23 exhibit weakly and that bears on the second axis of Chapter 11.

A number of Indigenous traditions articulate relations between human persons and other-than-human persons, including animals, features of landscape and waters, in which the other party holds a standing comparable to that of a human party. The relation so articulated differs from the relation to nature articulated in the traditions treated earlier in Part III, where the non-human world is more commonly ordered, addressed or correlated than treated as a party.

The bearing on this book is a bearing on its analytic vocabulary. The four axes of Chapter 11 distinguish relations among human persons from relations to the non-human world, and the distinction presupposes that the latter is not a relation among persons. In traditions where that presupposition does not hold, the axes cut the field wrongly.

Claim 24.4.1. (Failure of an analytic distinction under a differing attribution of personhood). *The distinction between relations among persons and relations to the non-human world, employed as an analytic axis in this book, presupposes a boundary of personhood; where a tradition draws that boundary differently, the axis misdescribes the relations the tradition articulates.*

The claim is recorded as a limitation of the framework used in Part III, and is carried to Chapter 25, where the comparative reading is qualified accordingly. Nothing further is inferred here from material this book has declined to examine.

24.5 Results and Their Limits

This chapter establishes three results, each of them a constraint on the book.

Indigenous ritual sound is not treated as a class in this book, because the category is assembled by external classification and its members share no properties that a common description could record. Where the ownership or restriction of an item is held within a tradition, the item

is not reproduced, transcribed, analysed or quoted here, and the technical availability of a recording supplies no permission. The analytic distinction between relations among persons and relations to the non-human world, used throughout Part III, presupposes a boundary of personhood which a number of traditions draw differently, and the axis accordingly misdescribes those traditions.

Two limits are recorded. The chapter rests on the methodological and ethical literature of the field and not on the study of any particular tradition's sounding practice, so that it supplies no case to the comparison of Chapter 26. The consequence is that the comparative reading of Chapter 25 is drawn from ten traditions, and its claims are stated accordingly.

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Chapter 25

Recurrent Relational Problems and the Mechanisms Selecting Their Solutions

This chapter assembles the comparative reading of Part III. Its role is to state what recurs across the traditions examined, to distinguish what recurs from the forms in which it is realised, and to assess the mechanisms by which a particular form comes to obtain in a particular place. It undertakes to establish five things: that a small number of relational problems recur across traditions that are historically independent in the relevant respects; that each such problem admits of several solutions, so that the recurrence of the problem underdetermines the form; that the three mechanisms distinguished in Chapter 14 stand in an uneven evidential position, with one directly observed and two supported only indirectly; that the account developed here differs from an account by inherited archetypes, and the difference is stated; and that four defects were found in the analytic framework of Part III in the course of applying it. It proceeds in six sections.

Two matters of scope govern the chapter. The comparative reading is drawn from the ten traditions described in Chapters 14 to 23, for the reason given in Chapter 24. Comparative statements are framed in the analytic vocabulary of this book, and where a tradition classifies its sounding practice otherwise, the statement records a decision of the analyst, as established in Chapter 22.

25.1 The Recurrent Relational Problems

This section states the problems that recur across the traditions examined. Its objective is to identify them and to give, for each, the traditions in which it appears and the evidence on which its identification rests. It proceeds by treating six problems in turn.

The first is *the coordination of collective delivery*. Where a body of participants delivers verbal material together, the delivery requires temporal alignment. The problem appears in every tradition of Part III in which delivery is collective, and its solutions are treated in Section 2.

The second is *the exact preservation of a fixed verbal text*. Every tradition examined holds a body of verbal material whose wording is to be reproduced without alteration, and every tradition maintains apparatus directed at that end.

The third is *the differentiation of ritual position*. Every tradition examined distinguishes po-

sitions within its rite, assigns portions of the sounding to them, and fixes criteria of eligibility for each.

The fourth is *the marking of transition between stages of a rite*. Every tradition examined employs sounding to signal the passage from one portion of a rite to another, and in several the signalling instruments are distinguished from the instruments carrying continuous material.

The fifth is *the maintenance of relation with the dead and with predecessors*. Every tradition examined assigns sounding practice to occasions concerning the dead, to the commemoration of predecessors, or to the enactment of a chain of transmission.

The sixth is *the constitution of a collective party*. In every tradition examined the rite constitutes a body of participants as a party for whom or by whom the rite is performed, and the sounding practice participates in that constitution.

Claim 25.1.1. (Recurrence of relational problems across independent traditions). *Six relational problems recur across the ten traditions examined in Part III, including traditions between which no historical contact bearing on the practice in question is documented.*

Two qualifications attach to the claim and are stated with it. The problems are stated at a level of generality at which they are unlikely to fail to recur, and their recurrence is therefore a weaker result than it appears; the substantive content lies in the divergence of solutions treated in Section 2. And the identification of a problem is an act of the analyst, since no tradition examined states its practice as the solution of a problem so described.

25.2 The Divergence of Solutions Under a Common Problem

This section establishes the principal comparative result of Part III. Its objective is to show that each recurrent problem admits of several solutions realised in different traditions, so that the recurrence of a problem underdetermines the form of its solution. It proceeds by treating three of the six problems in detail.

The coordination of collective delivery admits two solution families among the traditions examined, and the division is clean. In the Daoist practice of Chapter 14 and the Chinese Buddhist practice of Chapter 15, coordination is effected by a maintained pulse supplied by struck instruments handled from a designated position. In the Japanese practice of Chapter 16, the Latin practice of Chapter 19 and the Eastern Christian practice of Chapter 20, coordination is effected by a leading voice together with a repertory acquired in common, with no maintained pulse.

The second family carries a condition established in Chapter 16 and worth restating here: coordination by common acquisition requires that the participants have acquired the repertory from a shared line of instruction, so that the solution is available only to a body trained together.

The exact preservation of a fixed verbal text admits at least four solutions among the traditions examined. Most secure the text by writing and leave sounding realisation to transmitted

practice. The tradition of Chapter 21 secures it by writing and additionally encodes its syntactic division in a sign system that simultaneously determines melodic figures. The tradition of Chapter 22 secures it by writing and by certified chains of oral transmission, with delivery governed by a codified body of phonetic and durational rules. The tradition of Chapter 23 secures it without a written exemplar, by permutational recitation formats functioning as redundancy against error.

The differentiation of ritual position admits solutions differing in what is differentiated. In several traditions the differentiation assigns instruments; in the tradition of Chapter 20, where instruments are excluded, the differentiation assigns functions within a body of voices, one portion carrying melodic material and another a sustained supporting component.

Claim 25.2.1. (Underdetermination of solution by problem). *Each recurrent relational problem identified in Section 1 admits of several solutions realised in different traditions of Part III, so that the recurrence of a problem underdetermines the form in which it is solved.*

The claim collects three results established separately in the tradition chapters: the underdetermination of realisation by doctrinal content in Chapter 14, the divergence of sounding profile under shared doctrinal inheritance in Chapter 17, and the divergence of vocal solution under a common instrumental exclusion in Chapter 20. Each shows a constraint of a different kind underdetermining the sounding organisation arising under it: doctrine, doctrinal inheritance, and material restriction respectively.

25.3 The Three-Level Reading and Its Standing

This section states the reading that Part III supports and fixes its standing. Its objective is to distinguish three levels within the comparative description and to state what may be asserted at each.

The three levels are these. The *relational problem* is the situation recurring across traditions, as identified in Section 1. The *realisation* is the form the solution takes in a given tradition, as described in Chapters 14 to 23. The *interpretation* is the account a tradition gives of its own practice, reported in the seventh section of each tradition chapter.

The three levels are logically independent in the following sense. Traditions sharing a problem may differ in realisation, as Section 2 establishes. Traditions sharing a realisation may differ in interpretation: the assignment of temporal control to a designated position occurs in Chapters 14 and 15 under interpretations that share little. And a tradition's interpretation may change while its realisation persists, as the modal classification superimposed upon an existing repertory in Chapter 19 illustrates.

Claim 25.3.1. (Independence of problem, realisation and interpretation). *Across the traditions examined, agreement at any one of the three levels of problem, realisation and interpretation entails agreement at neither of the others.*

The standing of the reading is that of an organising scheme supported by the ten cases

described. It is not established as a general result about religious traditions, and the sample from which it is drawn is stated in Chapter 13.

25.4 The Evidential Position of the Three Selection Mechanisms

This section assesses the mechanisms by which a particular realisation comes to obtain in a particular place. Its objective is to state the evidential position of each of the three mechanisms distinguished in Chapter 14, and to report the uneven result. It proceeds by treating each mechanism and closing with the assessment.

Institutional reproduction holds that a realisation persists and spreads according to the institutions that teach, publish and enforce it. The mechanism is directly observed in the documented period in four traditions of Part III. The notated collection of a standardised liturgical style published in 1991, together with the position of the establishment associated with it, supplies an instrument of propagation in the case of Chapter 14. The notational reform introduced from 1814 supplies one in the case of Chapter 20, and the contemporary dispute over the importation of a sustained supporting voice into a repertory organised without it exhibits the mechanism while it is operating. The circulation of recordings of particular reciters in the twentieth century supplies one in the case of Chapter 22. Heritage designation, treated in Chapter 13, supplies a further instrument across several traditions.

Local linguistic and environmental constraint holds that a realisation is shaped by the speech and by the surrounding musical practice of the community realising it. The mechanism is supported indirectly in two traditions. Certain communities treated in Chapter 21 realise their reading within the modal system of the surrounding musical culture, which is the clearest evidence available in Part III. The tradition of Chapter 16 is described in the scholarship as employing the scalar resources of its receiving culture for material of foreign origin. No case in Part III supplies a controlled demonstration, and the general mechanism of tonal constraint on sung contour is established in the linguistic literature as language-specific and therefore requiring demonstration for each case.

Lineage transmission holds that a realisation is what it is because it was received from a teacher who received it in turn. The mechanism is the account the traditions give of themselves, and it is supported by the traditions' own practice of identifying a realisation by the community transmitting it, as in Chapters 14 and 21. No case in Part III supplies an independent test of it.

Claim 25.4.1. (Uneven evidential position of the selection mechanisms). *Of the three mechanisms by which a realisation may come to obtain in a place, institutional reproduction is directly observed in the documented period in four traditions of Part III, local linguistic and environmental constraint is supported indirectly in two, and lineage transmission is attested as the traditions' own account of themselves without independent test.*

The result is uneven and the unevenness is the finding. The mechanism most readily observed is the one operating within the period of documentation, and its ready observation

follows from that fact, and it carries no implication as to its historical predominance. The mechanism the traditions themselves invoke is the one for which Part III supplies no independent evidence.

A structural obstacle underlies the last point and is stated in Chapter 21: across the communities compared there, transmission and environment covary, since a community distant in lineage is generally also distant in location and in surrounding musical practice. Chapter 26 treats what a case separating them would require.

25.5 The Relation to Accounts by Inherited Form

This section distinguishes the reading developed here from an account by inherited archetypes. Its objective is to state the difference and to identify the literatures with which the present account stands in relation. It proceeds by stating the alternative, giving the difference, and naming the adjacent literatures.

An account by inherited form holds that recurrent features of cultural practice arise from forms held in common by human beings independently of transmission. Applied to the material of Part III it would hold that the recurrences of Section 1 arise from an inherited stock of forms.

The reading developed here locates the recurrence at the level of the problem, leaving the form to vary. What recurs, on the present account, is a situation: bodies of people delivering material together, texts requiring exact reproduction, positions requiring differentiation. The situations recur because the conditions generating them recur, and the conditions are ordinary features of assembled human activity. The forms answering to them diverge, as Section 2 establishes, which is what an account by inherited form would leave unexplained.

Four adjacent literatures are named.

Accounts of recurrent cultural form as arising from attractors in psychological and ecological constraint, developed in the anthropology of cultural transmission, share with the present reading the location of the explanation outside an inherited stock of forms.¹

Structural accounts of invariants across cultural materials, which identify formal relations preserved under transformation, share the distinction between an invariant and its realisations, and differ in taking the invariant to be formal and cognitive where the present reading takes it to be situational.

Cognitive accounts of ritual form predict features of a rite from the representations participants hold of it, and have been tested cross-culturally against coded ritual samples.² A qualification is entered here and it is substantial: these accounts have been developed upon

¹Dan Sperber, *Explaining Culture: A Naturalistic Approach* (Oxford: Blackwell, 1996); Nicolas Claidière and Thomas C. Scott-Phillips have developed the account of cultural attraction subsequently.

²Harvey Whitehouse, *Modes of Religiosity: A Cognitive Theory of Religious Transmission* (Walnut Creek, CA: AltaMira Press, 2004); Robert N. McCauley and E. Thomas Lawson, *Bringing Ritual to Mind: Psychological Foundations of Cultural Forms* (Cambridge: Cambridge University Press, 2002); Quentin D. Atkinson and Harvey Whitehouse, "The cultural morphospace of ritual form," *Evolution and Human Behavior* 32, no. 1 (2011): 50–62, DOI 10.1016/j.evolhumbehav.2010.09.002.

ritual generally, and their systematic application to ritual *sounding* has not been undertaken so far as the present author is aware. The literature is accordingly adjacent to this chapter and supplies it with no result.

Quantitative studies identifying statistical regularities in musical features across a world-wide sample have established that regularities of the relevant kind exist and have connected them to coordination; that literature is empirical where the present reading is comparative, and its results bear on Section 1.³

Claim 25.5.1. (Location of recurrence at the level of the situation). *The recurrences identified in Part III are recurrences of relational situation, arising from conditions that recur wherever the corresponding activity is undertaken, and the forms answering to them diverge across traditions.*

25.6 Defects Found in the Analytic Framework

This section reports the defects that application of the framework of Part III disclosed. Its objective is to record them and to state their consequences for the remainder of the book. It proceeds by treating four defects in turn.

The first concerns the measure of elaboration. Definition 12.2 assesses sounding organisation, and Chapter 18 establishes that where sounding implements are carried and sounded by dancers, the elaboration resides in a coupled organisation of sound and movement which a measure applied to sounding alone understates. The measure is retained for the comparative purposes it serves, with the understatement recorded wherever the coupling obtains.

The second concerns the axes of relational description. Chapter 24 establishes that the axis separating relations among persons from relations to the non-human world presupposes a boundary of personhood which traditions draw differently, so that the axis misdescribes traditions drawing it otherwise. The axes are retained for the ten traditions to which they were applied, and the limitation is carried forward.

The third concerns the category under which the comparison is conducted. Chapter 22 establishes that where a tradition holds a distinction of kind between its sounding practice and song, application of an external category of music imports a classification the tradition declines. Comparative statements in this book crossing such a classification are the analyst's constructions, and are so marked.

The fourth concerns the assignment of a single profile to a tradition. Chapter 23 establishes that a single tradition may maintain a preservation-organised sounding practice alongside an elaboration-organised one, with distinct personnel and criteria of correctness, so that a tradition need not occupy one position on the elaboration scale.

³Patrick E. Savage, Steven Brown, Emi Sakai and Thomas E. Currie, "Statistical universals reveal the structures and functions of human music," *Proceedings of the National Academy of Sciences* 112, no. 29 (2015): 8987–8992, DOI 10.1073/pnas.1414495112; on the coding tradition from which it descends and the criticism directed at it, Patrick E. Savage, "Alan Lomax's Cantometrics Project: A comprehensive review," *Music & Science* 1 (2018), DOI 10.1177/2059204318786084; and for the released codings, Anna L. C. Wood et al., "The Global Jukebox: A public database of performing arts and culture," *PLOS ONE* (2022).

Claim 25.6.1. (Disclosure of framework defects through application). *Four defects in the analytic framework of Part III were disclosed by its application: understatement of elaboration under coupling of sound and movement, misdescription under a differing attribution of personhood, importation of a category a tradition declines, and the assignment of a single elaboration profile to a tradition maintaining several.*

The four defects are carried into Part IV, where the historical material is described with the same framework and the same limitations apply.

25.7 Summary of Results

This chapter has established the following. A small number of relational problems recur across the traditions examined, and the problems are stated at a generality at which recurrence is close to inevitable, so that the identification of a problem is an act of the analyst. Each recurrent problem receives more than one solution, so that recurrence underdetermines the form of the solution adopted. The problem, the realisation and the interpretation are three independent levels. Of the three selection mechanisms, their evidential positions are uneven, and the unevenness is itself the finding: institutional reproduction is directly observed because it operates within the documentation window, constraint by the local sounding environment is supported indirectly, and lineage transmission is attested only as the traditions' own account of themselves and is tested nowhere in this book. Recurrence is located at the level of the situation, and requires no inherited stock of forms; four adjacent literatures are named, of which the cognitive accounts of ritual form supply this chapter no result, since they have been developed upon ritual generally. Four defects in the analytic framework of Part III were disclosed by its application, and each is carried forward to the chapters that must observe it.

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Chapter 26

Independent Convergence, Historical Contact, and the Results Carried Into the Historical Chapters

This chapter closes Part III. Its role is to assemble the controlled comparisons the Part was designed to supply, to distinguish convergences arising independently from those arising through contact, to report the Part's performance against the three deliverables fixed in Chapter 11, and to state what is carried into Part IV. It undertakes to establish four things: that the criteria distinguishing independent convergence from contact may be applied to two cases in Part III with determinate results; that three controlled comparisons are available, of differing tightness, and that their joint result is stated precisely; that a fourth comparison required to separate two selection mechanisms is unavailable in Part III and its requirements can be specified; and that Part III delivers two of its three undertakings and reports the third as unfulfilled. It proceeds in six sections.

26.1 Criteria Separating Independent Convergence From Historical Contact

This section fixes the criteria applied in Section 2. Its objective is to state what evidence distinguishes a convergence arising independently from one arising through transmission. It proceeds by giving three criteria and stating their joint force.

The first criterion is documentary: a documented line of contact bearing on the practice in question supports transmission, and its absence, where the historical record for the relevant period and region is otherwise adequate, supports independence.

The second criterion is structural: transmission tends to carry associated features together, so that a shared practice accompanied by shared terminology, shared implements or shared repertoire supports transmission, and a shared practice unaccompanied by these supports independence.

The third criterion is functional: where a shared practice answers a condition that arises wherever the corresponding activity is undertaken, independent arrival at it is available, and the sharing supplies weak evidence of contact.

The three criteria are jointly indicative and severally weak. Their application in Section 2 is accordingly stated with the evidential weight each case carries.

26.2 Two Convergences Assessed

This section applies the criteria to two convergences established in the tradition chapters. Its objective is to reach determinate assessments where the evidence permits.

The first convergence concerns coordination by common acquisition. The traditions of Chapters 16, 19 and 20 coordinate unmetered collective delivery by a leading voice together with a repertory acquired in common. On the first criterion, no line of contact bearing on this feature is documented between the Japanese tradition and the two Christian ones for the periods concerned. On the second, the traditions share no terminology, no implements and no repertoire in respect of it. On the third, the practice answers a condition arising wherever a body trained together delivers material without instrumental time-keeping. The assessment is independent convergence, with the third criterion supplying the reason such convergence is available.

The second convergence concerns the assignment of temporal control to a designated position. The traditions of Chapters 14 and 15 both assign the handling of pacing instruments to a defined office. On the first criterion, these traditions developed in sustained contact within a shared region and shared institutional environment over a long period, and contact bearing on ritual practice is documented between them. On the second, they share implement types, including the wooden slit drum. The assessment is that contact cannot be excluded, and the case supplies no evidence of independent convergence.

Claim 26.2.1. (Determinate assessment of two convergences). *Coordination by common acquisition converges across traditions between which no contact bearing on the feature is documented and which share no terminology, implements or repertoire in respect of it; the assignment of temporal control to a designated office converges across traditions in documented contact sharing implement types, and independence cannot be asserted there.*

26.3 The Three Controlled Comparisons

This section assembles the comparisons on which Part III's principal result rests. Its objective is to state each comparison's design, its finding and its tightness, and to give their joint result. It proceeds by treating each in turn and closing with the joint statement.

The first comparison is that of Chapter 14. Its design holds the verbal text fixed, together with the doctrinal content of that text and the language of delivery, and varies lineage and locality. Its finding is that the melodic realisation diverges materially across lineages and localities. Its tightness is high with respect to text, doctrine and language, and it is limited by the dating of the documentation to the period from the late 1970s onward.

The second comparison is that of Chapters 15 and 16. Its design holds doctrine and a substantial portion of textual material fixed and varies language, institution, geographical setting and period. Its finding is that the two branches diverge in the coordination of collective delivery, in the presence of a melodic notation and in the scalar resources employed. Its tightness

is low, since several factors vary together and the documentation of the two terms is not contemporaneous.

The third comparison is that of Chapter 21. Its design holds fixed the consonantal text, the system of signs governing its delivery and the three functions those signs perform, and varies the community. Its finding is that materially different melodic figures are assigned to identical signs across communities. Its tightness is the highest of the three, and it is limited by the covariation of transmission with environment across the communities compared.

Claim 26.3.1. (Joint result of the three comparisons). *Across three comparisons of differing design, in three traditions unrelated in doctrine, language and institution, a fixed verbal text together with its fixed prescriptive apparatus receives materially divergent sounding realisations, so that the sounding realisation of a liturgical text is underdetermined by the text and by its prescription.*

The joint result is the principal finding of Part III and it is negative. Its value lies in what it forecloses. An account on which the sounding organisation of a rite expresses, represents or follows from the doctrinal content of the rite is excluded by it, in three traditions, on independent evidence.

26.4 The Comparison Required to Separate Transmission From Environment

This section specifies a comparison Part III does not supply. Its objective is to state what would separate the second and third selection mechanisms, and to identify the case types that would do so. It proceeds by stating the obstacle, giving two case types, and noting where they may be sought.

The obstacle is the covariation established in Chapter 21. Communities distant in line of transmission are generally also distant in geography and in surrounding musical practice, so that a divergence between them supports both mechanisms equally.

Two case types separate them.

The first holds transmission constant and varies environment: a community that migrates carries its line of instruction into a new linguistic and musical setting, and the question is whether its realisation moves toward the setting or holds to the line. The answer discriminates directly.

The second holds environment constant and varies transmission: two communities of distinct lineage practising in one locality, sharing a speech variety and a surrounding musical practice, are compared, and the question is whether their realisations converge toward the locality or hold to their respective lines.

Requirement 26.4.1. (Specification of the discriminating comparison). *Separation of transmission from environment as selection mechanisms requires either a community whose line of instruction is held constant across a change of linguistic and musical setting, or two communities of distinct lineage practising within a single setting, with the realisations compared in each case.*

Cases of both types exist. Diaspora communities of several of the traditions treated in Part III supply the first, and localities in which distinct ordination lineages or distinct communal traditions coexist supply the second. Neither has been examined in the literature relied upon here in a form permitting the comparison, and the requirement is recorded as an outstanding item for the research programme this book proposes.

26.5 Performance Against the Undertakings of Part III

This section reports Part III against the three deliverables fixed in Section 11.5 of Chapter 11. Its objective is to state which were delivered and in what form.

The first undertaking was a demonstration that relational commitments identified independently of the music do or do not govern musical practice in specified cases. It is delivered. Chapters 14, 16, 21, 20 and 23 each establish a relation operative within the internal organisation of the sounding, and the channels differ: a physical requirement of collective sounding, an institutional condition of common acquisition, a commitment concerning the correct articulation of a text, a normative restriction on material discharged by differentiation within the assembly, and a commitment concerning the exactness required in transmission. The strongest instance is that of Chapter 21, where a commitment about the text issues directly in melodic determination.

The second undertaking was at least one comparison holding the verbal content of a rite constant while its musical realisation varies. It is delivered three times, and Section 3 states the joint result.

The third undertaking was a specification of the mechanisms by which a musical form comes to be the form it is in a given place. It is delivered in part and reported here as unfulfilled in its principal component. The mechanisms are specified and their evidential positions are assessed in Chapter 25. The assessment is uneven: one mechanism is directly observed within the period of documentation, one is supported indirectly in two traditions, and one is attested only as the traditions' account of themselves. The comparison that would discriminate the second from the third is specified in Section 4 and is not performed.

Claim 26.5.1. (Standing of the results of Part III). *Part III establishes that the sounding realisation of a liturgical text is underdetermined by the text and its prescription, and identifies five distinct channels through which a relational commitment enters the internal organisation of sounding; it specifies three mechanisms selecting a realisation and establishes the operation of one within the documented period, leaving the relative contribution of the three undetermined.*

26.6 The Results Carried Into the Historical Chapters

This section states what Part IV inherits. Its objective is to identify the results, the methods and the limitations carried forward. It proceeds by treating each class.

Four results are carried forward. The underdetermination of sounding realisation by text

and prescription supplies the presumption against which the historical material of Part IV is read. The distinction between relations operative externally and relations operative internally supplies the criterion applied to historical cases. The three selection mechanisms supply the candidate explanations for historical change in musical form. The two-family solution to the coordination of collective delivery supplies a specific point of contact, since the historical transition treated in Part IV from a performance culture of realising performers to one of specified scores bears directly upon it.

Two methods are carried forward. The marking of every historical statement as attested, reconstructed or inferred, fixed in Chapter 13, governs Part IV. The practice of presenting contested questions with their competing positions and leaving them open, applied in Chapters 18, 19, 20 and 23, governs Part IV, where the periodisation of the material is itself contested.

Four limitations are carried forward, and they are the defects reported in Chapter 25: the understatement of elaboration where sound and movement are coupled, the misdescription arising where personhood is attributed differently, the importation of a category some traditions decline, and the inadequacy of a single elaboration profile for a tradition maintaining several.

One further inheritance is recorded, and it is the most consequential for Part IV. The tradition of Chapter 19 is at once a case of Part III and the origin of the trajectory examined in Part IV. The controversy over the formation and transmission of its repertory, reported there and left open, is a controversy about which of the three selection mechanisms predominated, conducted on the richest documentary base available to this book. Part IV takes up the same question for the later periods of the same tradition, where the documentation is richer still.

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Part IV

Historical Trajectories

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Chapter 27

Feasibility, Possibility Space, and the Form of the Historical Question

This chapter opens the historical portion of the book. Its role is to state the question Part IV asks about musical change, and to fix the form an answer must take. It undertakes to establish four things: that the question concerns the conditions under which particular relational architectures became feasible, and that this differs from a question about causes; that feasibility is assessed along six dimensions, each supplying a distinct source of exclusion; that a set of conditions determines a possibility space and leaves the selection within it undetermined; and that an endogenous mechanism operates alongside the conditions, in which a solution adopted generates the problem next confronted. It proceeds in five sections.

27.1 Feasibility Distinguished From Causation

This section fixes the form of the question. Its objective is to distinguish a question about feasibility from a question about causes, and to state why the first is the one this book asks. It proceeds by giving both forms, stating the difficulty with the second, and adopting the first.

A causal question about musical change asks what made a practice adopt the organisation it adopted. An answer would identify conditions whose obtaining was sufficient for the adoption.

A feasibility question asks what made an organisation available to a practice that had previously been unable to sustain it. An answer identifies the constituent whose alteration moved a configuration from the excluded class to the admitted class, in the sense fixed by Chapter 10.

The difficulty with the causal form is that its answers are unavailable. Musical change occurs once, in circumstances that do not recur, and the conditions obtaining at any moment are numerous. Part III recorded the same difficulty in a comparative setting and recorded that the mechanisms it separated could not be discriminated where their operation was confounded.

Claim 27.1.1. (Adoption of the feasibility form). *Part IV asks under what conditions particular relational architectures became available to musical practices, and an answer identifies the constituent of a field whose alteration admitted a previously excluded configuration.*

The claim carries a restriction which is stated at once. An answer of this form establishes

that a configuration became available and establishes nothing about why it was taken up. Chapter 10 distinguished admission from adoption, and the distinction governs every chapter of this Part.

27.2 The Dimensions Along Which Feasibility Is Assessed

This section states the dimensions. Its objective is to enumerate the sources of exclusion identified in Chapter 10 and to expand them into the six headings under which the configuration chapters proceed. It proceeds by treating each.

Material and technical conditions comprise the sounding bodies available, their construction and their properties, together with the technologies of reproduction and circulation. Exclusion arises where no available body can execute a required relation.

Economic conditions comprise the arrangements by which a practice is provisioned: who pays, on what terms, and with what expectation of return. Exclusion arises where the assembly of the required resources exceeds what the arrangements will support.

Political and institutional conditions comprise the authorities regulating a practice, the establishments maintaining it, and the legal instruments bearing upon it.

Social-structural conditions comprise the division of musical labour: who performs, on what terms of employment or obligation, with what training, and under what criteria of eligibility.

Spatial and acoustic conditions comprise the settings available for performance and their properties.

Reproductive and perceptual conditions comprise the means by which a practice is transmitted to new performers and made available to hearers.

Requirement 27.2.1. (Identification of the excluding dimension). *A claim in this Part that a configuration was excluded from a field identifies the dimension supplying the exclusion, and a claim that a configuration became admitted identifies the alteration along that dimension which admitted it.*

27.3 Possibility Space and the Underdetermination of Selection

This section states the relation between conditions and outcomes. Its objective is to establish that conditions determine a space of available configurations and leave the selection within it undetermined, and to record the evidential basis for the claim. It proceeds accordingly.

Definition 27.3.1. (Possibility space). *The possibility space of a field at a time is the set of configurations the field admits, in the sense of Chapter 10, given its material, economic, political, social, spatial and reproductive conditions.*

Claim 27.3.2. (Underdetermination of configuration by conditions). *The conditions obtaining within a field determine the configurations it admits and leave undetermined which of the admitted*

configurations a practice realises.

The claim is supported by the results of Part III, and the support is worth stating because it is the principal service Part III renders to Part IV. Chapter 14 established that a fixed text and prescriptive apparatus underdetermine sounding realisation; Chapter 17 established that a shared doctrinal inheritance underdetermines the sounding profile; Chapter 20 established that a shared material restriction underdetermines the vocal solution adopted under it.

The consequence for the historical chapters is that an account of conditions is not an account of outcomes. Where a practice adopted a configuration, the conditions explain its availability and the adoption requires separate treatment, which the chapters supply where the evidence permits and withhold where it does not.

27.4 Endogenous Generation of the Succeeding Problem

This section states a mechanism operating alongside the conditions. Its objective is to characterise it, to concede its ancestry, and to fix its status in this book. It proceeds accordingly.

The mechanism is that a solution adopted within a practice generates the problem the practice next confronts. A relation established among parties raises a question about how it is to be sustained, extended or coordinated, and the answer establishes further relations raising further questions.

The mechanism has an ancestor and the concession is made here. Leonard Meyer's account of style as a system of constrained choice, in which the realisation of some possibilities forecloses others and change is accordingly trended, states the mechanism for musical style.¹ Comparable accounts in the history of the visual arts treat the artist's problem-situation as generated by prior solutions.

Claim 27.4.1. (Inheritance of the endogenous mechanism). *The account of musical change as generating its own succeeding problems is inherited from the literature on style as constrained choice, and this book contributes its combination with the conditional account of Sections 1 to 3.*

The combination is the contribution and its form is stated. The endogenous mechanism supplies the problems a practice confronts; the conditions supply the solutions available to it. Neither alone determines a trajectory, and the chapters of this Part treat both at each configuration.

27.5 The Prohibition of Developmental Ordering in Historical Description

This section applies to the historical chapters the prohibition fixed in Chapter 5. Its objective is to state what the prohibition forbids in a historical setting and to supply the description that replaces the forbidden one. It proceeds accordingly.

¹Leonard B. Meyer, *Style and Music: Theory, History, and Ideology* (Philadelphia: University of Pennsylvania Press, 1989).

The prohibition forbids ordering musical configurations along a scale of development, and forbids treating a configuration employing fewer simultaneous parts or a narrower range of distinctions as an earlier or lesser form of one employing more.

Its application to a historical Part requires care, since the material is arranged in temporal order and the arrangement invites the forbidden reading. Three practices are adopted.

Configurations are described by the relations they sustain and by the conditions admitting them, and no configuration is described as anticipating or falling short of another.

Transformations are described as the acquisition or loss of particular functions, in the manner supplied by Chapter 8 for the functions of a coordinating centre, so that a change is stated without a scale.

Where a practice ceased to sustain a relation it had sustained, the cessation is described as such, and the vocabulary of decline is withheld.

Requirement 27.5.1. (Description without ordering). *Historical descriptions in this Part state which relations a configuration sustained and which conditions admitted it, and describe transformations as acquisitions and losses of specified functions.*

27.6 Summary of Results

This chapter has established the following. Part IV asks under what conditions particular relational architectures became available to musical practices, and an answer identifies the constituent whose alteration admitted a previously excluded configuration; the causal form of the question is set aside as unanswerable from the evidence. Feasibility is assessed along six dimensions, each supplying a distinct source of exclusion, and a claim of exclusion identifies its dimension. Conditions determine a possibility space and leave the selection within it undetermined, which Part III established in three independent ways, so that an account of conditions is not an account of outcomes. An endogenous mechanism operates alongside the conditions, in which a solution generates the succeeding problem; the mechanism is inherited from the literature on style as constrained choice, and its combination with the conditional account is the contribution claimed. Historical descriptions state which relations a configuration sustained and which conditions admitted it, and describe transformations as acquisitions and losses of specified functions.

Chapter 28

Concurrent Trajectories, Contact as an Instrument of Identification, and the Template of the Configuration Chapters

This chapter fixes the comparative arrangement of Part IV. Its role is to establish why the Western and East Asian materials are treated concurrently, to state what historical contact supplies to the argument, and to give the template the configuration chapters follow. It undertakes to establish four things: that the two trajectories are treated as concurrent and coupled, with the consequence that their contacts are part of the object; that contact events supply an identification strategy unavailable within a single trajectory; that the strategy has a stated limit; and that the eight-heading template makes the configuration chapters comparable. It proceeds in five sections.

28.1 Concurrency and Its Consequence for the Arrangement

This section states the arrangement. Its objective is to establish that concurrent treatment is required by the object and to record what it costs. It proceeds by stating the arrangement, giving the reason, and recording the cost.

The trajectories treated in this Part are concurrent in time. The configurations described in Chapters 30 to 35 and those described in Chapters 36 to 43 obtained simultaneously, and their practitioners were in contact at documented points.

Treating them as concurrent has a consequence for the object of study. Where two trajectories are treated separately, each is described as an internal development. Where they are treated as concurrent, the couplings between them are constituents of each, and a configuration is described with the contacts bearing upon it.

Claim 28.1.1. (Constitutive standing of the couplings). *Where trajectories in contact are treated as concurrent, the couplings between them are constituents of each trajectory, and a description omitting them describes a trajectory that did not obtain.*

The cost is recorded. Concurrent treatment requires that both trajectories be worked at comparable depth, and the chapters of this Part accordingly divide their length between them. A book treating one trajectory in depth and the other as comparative illustration would say more about the first.

28.2 Contact as an Instrument of Identification

This section states what contact supplies to the argument. Its objective is to establish that contact events permit an inference unavailable within a single trajectory, and to state its form. It proceeds by giving the problem, the design, and the inference.

The problem is that of Chapter 27: conditions determine a possibility space and leave selection undetermined, so that observing a configuration and its conditions establishes availability and leaves the selection unexplained.

The design available at a contact event is as follows. Where a body of musical material, a technology or an institutional form reaches two trajectories whose configurations differ, the arriving element is approximately common and the receiving configurations differ. Differences in what was taken, what was refused and what was altered are then attributable to the receiving configurations.

Claim 28.2.1. (Identification at contact events). *Where an approximately common element reaches two differing configurations, the divergence in its reception is attributable to the receiving configurations, and the inference is unavailable where only one reception is observed.*

The design is the historical counterpart of the controlled comparisons assembled in Chapter 26, and it inverts them. There a common text met differing receivers within a family of related traditions; here a common arrival meets configurations with no common ancestry in the relevant respect.

28.3 The Limit of the Contact Design

This section states the design's limit. Its objective is to identify what the design cannot establish and to record where the limit binds. It proceeds accordingly.

The design requires that the arriving element be approximately common across the receptions compared, and the requirement is demanding. An element arriving at two places arrives by different routes, in different quantities, at different dates, and in the hands of different carriers.

Requirement 28.3.1. (Statement of the commonality assumed). *A claim resting on the contact design states what is assumed common across the receptions compared and identifies the respects in which the arrivals differed.*

Two further limits are recorded. The design attributes divergence to the receiving configurations taken as wholes, and supplies no attribution to any constituent of them, so that a finer question requires further evidence. And the design compares receptions whose documentation differs in kind and in density, which Part III recorded as a general difficulty and which recurs here.

28.4 The Template of the Configuration Chapters

This section gives the template. Its objective is to fix a common order of exposition so that corresponding material occupies corresponding positions across the twelve configuration chapters. It proceeds by giving the eight headings with the content of each.

1. **The configuration in outline.** The period and place treated, the practices comprised, the principal scholarship, and the character and density of the documentation.
2. **Material and technical conditions.** Sounding bodies, their construction and properties; technologies of notation, reproduction and circulation.
3. **Economic organisation.** The provisioning of practice: employment, patronage, ticketed access, publication, and the terms of each.
4. **Political and institutional conditions.** Authorities regulating practice; establishments maintaining it; legal instruments bearing upon it.
5. **Social structure and the division of musical labour.** Positions, eligibility, terms of employment or obligation, training, and status.
6. **The cultural and theoretical field.** The accounts participants gave of their practice, the theoretical apparatus in use, and the criticism addressed to it.
7. **The relational architecture.** The configuration described in the terms of Part II: temporal organisation, textural organisation, the functions of any coordinating centre, and the distribution of adjudicative position.
8. **The problem generated and what it opened.** The succeeding problem in the sense of Chapter 27, and the configurations that became admitted.

The seventh heading carries the argument and the first six supply its conditions. The eighth connects a configuration to the one following without asserting that the second was thereby caused.

28.5 The Items This Part Owes to the Preceding Parts

This section records obligations. Its objective is to state what earlier Parts have deferred to this one, so that their discharge may be assessed. It proceeds by naming three.

Chapter 52 claimed a historical transformation in which adjudication of a performance passed from a position within the sounding body to a position outside it held by a party producing no sound, and deferred the dated evidence to this Part. Chapter 33 supplies it.

Chapter 49 claimed that the position an element occupies within a relational organisation constrains the meanings it may stably carry, and specified that a test would consist in a documented case of an ascribed meaning failing to hold. Chapter 44 supplies the candidate.

Chapter 55 referred to a documented development of increasingly complete specification of performance, and deferred it to this Part. Chapters 30 to 34 treat it as a running thread and Chapter 44 assembles it.

Claim 28.5.1. (Standing of the deferred items). *Three claims advanced in Parts VI and V rest on historical evidence deferred to Part IV, and their standing depends upon the discharge of the obligation in the chapters named.*

28.6 Summary of Results

This chapter has established the following. The Western and East Asian trajectories are treated as concurrent, with the consequence that the couplings between them are constituents of each and that both are worked at comparable depth. Contact events supply an identification strategy in which an approximately common arrival meets differing receiving configurations, so that divergence in reception is attributable to the receivers; the strategy is the historical counterpart of the controlled comparisons of Part III and inverts them. The strategy is limited by the demanding requirement that the arrival be approximately common, by its attribution to configurations taken as wholes, and by the unevenness of documentation. The configuration chapters follow an eight-heading template in which the seventh carries the argument. Three claims advanced in Parts V and VI rest on evidence deferred to this Part, and the chapters discharging each are named.

Chapter 29

The Western Trajectory in Outline and the Standing of Its Periodisation

This chapter opens the Western portion of Part IV. Its role is to state what the following five chapters treat, to establish the standing of the period divisions they employ, and to identify what a relational reading adds to a well-studied history. It undertakes to establish four things: that the period divisions in general use are scholarly constructions with a documented history, and that this book uses them as expository conveniences under a stated qualification; that the substantive musical history of these periods is not rewritten here; that what the relational reading adds is confined to three specifiable matters; and that the documentation available differs in kind across the five configurations, with consequences for what may be claimed of each. It proceeds in five sections.

29.1 The Period Divisions and Their Constructed Character

This section treats the period divisions. Its objective is to establish that they are constructions, to identify the scholarship establishing this, and to state the use made of them here. It proceeds accordingly.

The divisions conventionally employed for Western art music are scholarly constructions of the nineteenth and twentieth centuries, and the historiographical literature has examined their formation. Carl Dahlhaus treated the problem of periodisation directly, together with the distinction between a structural history of music and a history of its events, and argued that the categories through which musical history is narrated are themselves objects requiring examination.¹

That the divisions are contested is exhibited by the disagreement among the standard histories themselves. The editor of the eighteenth-century volume of the Cambridge History declines period labels and organises by genre and setting; the editor of the nineteenth-century volume adopts a long century and interrogates the categories of genius, nation and canon; and Taruskin's history is avowedly sceptical of period divisions and of the narrative of succession they carry. The point of contrast is the *New Oxford History of Music*, whose organisation is by

¹Carl Dahlhaus, *Foundations of Music History*, trans. J. B. Robinson (Cambridge: Cambridge University Press, 1983); originally *Grundlagen der Musikgeschichte* (Cologne, 1977).

period throughout.

Two hazards attach to the divisions and both bear on this book. The divisions carry an implicit narrative of succession in which each period prepares the next, which the prohibition fixed in Chapter 5 forbids. And they were drawn from the repertory of a small number of centres, so that practices elsewhere are described as peripheral to a development defined without them.

Requirement 29.1.1. (Use of the period divisions). *The period divisions employed in Chapters 30 to 35 are expository conveniences marking approximate spans within which the configurations described obtained, and no claim of succession, preparation or completion is carried by the arrangement.*

The divisions are retained because abandoning them would require the invention of a private scheme, and a private scheme would obstruct the comparison of this book's descriptions with the existing literature.

29.2 What This Book Does Not Rewrite

This section states what is inherited. Its objective is to identify the substantive history the following chapters take from existing scholarship, and to fix the standing of this book's contribution. It proceeds by naming what is inherited and what is claimed.

The following are inherited and are not established here: the chronology of works, composers and institutions; the technical description of musical materials and their transformations; the histories of instrument construction, of notation, of publishing, of concert institutions and of musical employment; and the interpretive controversies attached to each, which are reported where they bear upon the argument.

Claim 29.2.1. (Inherited standing of the substantive history). *The substantive musical history of the periods treated in Chapters 30 to 35 is drawn from existing scholarship, and this book contributes a description of the relational architectures those histories exhibit together with an account of the conditions admitting them.*

2

The claim is a restriction on what the following chapters may be read as offering. A reader seeking an account of the music of these periods should read the scholarship cited; a reader seeking the relational description will find it in the seventh section of each chapter.

²The histories inherited are principally Richard Taruskin, *The Oxford History of Western Music*, 6 vols. (New York: Oxford University Press, 2005); J. Peter Burkholder, Donald Jay Grout and Claude V. Palisca, *A History of Western Music*, 10th ed. (New York: W. W. Norton, 2019); and the period volumes of the *Cambridge History of Music*, among them *The Cambridge History of Seventeenth-Century Music*, ed. Tim Carter and John Butt (2005), *The Cambridge History of Eighteenth-Century Music*, ed. Simon P. Keefe (2009), *The Cambridge History of Nineteenth-Century Music*, ed. Jim Samson (2002), and *The Cambridge History of Twentieth-Century Music*, ed. Nicholas Cook and Anthony Pople (2004). The older *New Oxford History of Music*, 10 vols. (London: Oxford University Press, c. 1954–1990), is organised strictly by the period labels the present section treats as constructed, and serves here as the point of contrast.

29.3 The Three Additions Claimed

This section states what the relational reading adds. Its objective is to identify three specifiable additions and to name where each is tested. It proceeds by treating them in turn.

The first addition is the description of a configuration by the relations it sustains, in the vocabulary fixed in Part II. Where the existing literature describes a period by its style, this book describes it by its temporal organisation, its textural organisation, the functions performed by any coordinating centre, and the distribution of adjudicative position. The description is a redescription, and Chapter 44 assesses whether it yields anything the style description does not.

The second addition is the treatment of conditions as admitting and excluding configurations, in the form fixed in Chapter 10. Where the existing literature relates conditions to music causally or by correspondence, this book states which constituent altered and which configuration thereby passed from excluded to admitted.

The third addition is the concurrent treatment of two trajectories with their contacts, in the form fixed in Chapter 28.

Requirement 29.3.1. (Assessment of the additions). *Each of the three additions is assessed in Chapter 44, which reports whether the relational description licenses statements the existing descriptions withhold.*

The requirement is entered here because a redescription that licenses nothing is a vocabulary, and Chapter 2 fixed the standard by which this book's integrative claims are to be judged.

29.4 The Documentation and Its Variation Across the Five Configurations

This section states what evidence is available. Its objective is to record that the documentation differs in kind across the five configurations and to state the consequence for what may be claimed of each. It proceeds by treating the variation.

For the earlier configurations, the documentation comprises notated sources, instruments, treatises, institutional records and iconography. Sound is unavailable, and every claim about sound is a reconstruction in the sense of Chapter 13.

For the later configurations, recorded sound is available from the late nineteenth century onward, and its availability alters the evidential situation fundamentally. Recording supplies evidence about sound at the date of the recording, and the methodological caution fixed in Chapter 13 applies with full force: a recording of a work composed earlier is evidence about the performance practice of the recording's date.

Institutional documentation is dense throughout: contracts, payrolls, subscription lists, publishers' records, theatre accounts and the minutes of societies survive in quantity and support claims about economic and institutional conditions with a precision that claims about sound cannot attain for the earlier periods.

Claim 29.4.1. (Asymmetry between the institutional and the sonic record). *For the earlier configurations of this trajectory the institutional record supports claims of a precision unavailable for claims about sound, and the asymmetry places the weight of this Part's argument upon conditions and upon notated relations.*

The claim explains a feature of the chapters that follow. Their arguments rest most heavily on what may be established about provisioning, employment, eligibility and notated specification, and rest lightly on claims about how the music sounded.

29.5 The Sequence of the Five Configurations

This section states what each of the following chapters treats. Its objective is to give the reader the arrangement in advance.

Chapter 30 treats the configuration in which a notated bass with figures specified a relation and left its realisation to the performer, and in which commercial opera established a form of provisioning by paying audiences.

Chapter 31 treats the configuration in which provisioning shifted toward subscription and ticketed access, and in which the realising performer began to recede.

Chapter 32 treats the configuration in which industrialised instrument manufacture, the purpose-built hall and the conservatory obtained, and in which adjudication of performance passed to a party producing no sound.

Chapter 34 treats the configuration in which recording fixed performances, broadcasting dispersed audiences, and the coordinating centre described in Chapter 8 ceased to perform its functions in a portion of the repertory.

Chapter 35 treats the configuration in which amplification, electronic generation and studio production obtained, and in which the field of participation was reorganised by recording and distribution.

29.6 Summary of Results

This chapter has established the following. The period divisions employed in this Part are scholarly constructions with a documented history, carrying an implicit narrative of succession that this book's prohibitions forbid; they are retained as expository conveniences under a stated qualification. The substantive musical history of these periods is inherited from existing scholarship and is not established here. Three additions are claimed: the relational description of configurations, the treatment of conditions as admitting and excluding configurations, and the concurrent treatment of two trajectories, each to be assessed in Chapter 44. The documentation supports claims about institutional and economic conditions with a precision unavailable for claims about sound in the earlier configurations, which places the weight of the argument upon conditions and upon notated relations.

Chapter 30

The Baroque Configuration and the Notated Specification of a Relation

This chapter treats the first of the five Western configurations. Its role is to describe a relational architecture in which a notated layer specified a relation and left its realisation to the performer, and to identify the conditions admitting it. It undertakes to establish four things: that the figured bass notates a relation in place of a set of sounding events, which distinguishes it from every other notational practice treated in this book; that the resulting arrangement places a fixed layer and a variable layer in the same structural relation as the cases assembled in Chapter 26; that the commercial opera house established a form of provisioning in which a paying audience admitted configurations that patronage had excluded; and that the configuration generated the problem of specification which the succeeding chapters trace. It follows the template of Chapter 28.

30.1 The Configuration in Outline

This section identifies what the chapter treats. Its objective is to fix the period, the practices and the documentation.

The configuration treated obtained in European musical practice across roughly the seventeenth century and the first half of the eighteenth. The practices comprised court and ecclesiastical music-making, the commercial opera house, and domestic and amateur music-making supported by publication.

The documentation comprises notated sources, surviving instruments, theoretical treatises, institutional and theatrical records, and iconography. Sound is unavailable, and claims about sound in this chapter are reconstructions in the sense of Chapter 13.

The principal scholarship on continuo practice is that of Tharald Borgir, whose study of Italian practice remains the standard treatment.¹ The standard account of the Venetian commercial opera house is that of Ellen Rosand.²

¹Tharald Borgir, *The Performance of the Basso Continuo in Italian Baroque Music*, Studies in Musicology 90 (Ann Arbor: UMI Research Press, 1987). Details of the original dissertation and of the series stand on the verification list.

²Ellen Rosand, *Opera in Seventeenth-Century Venice: The Creation of a Genre* (Berkeley: University of California Press, 1991).

30.2 Material and Technical Conditions

This section treats the material dimension.

Instrument construction attained forms that remained standard subsequently, and the violin family in particular reached a construction that later practice modified without replacing. Keyboard instruments of plucked and struck action were available, together with organs of varied disposition.

Tuning is a condition of consequence for the relational architecture and is stated carefully. A variety of unequal temperaments was in use, and the twelve-tone equal temperament formulated mathematically in the sixteenth century was not the standard tuning of keyboard practice in this period. The point is recorded because the retrojection of later tuning onto this repertory is a documented hazard.

Printing and manuscript copying supplied circulation, and the economics of publication are treated in Section 3.

30.3 Economic Organisation

This section treats provisioning. Its objective is to distinguish three arrangements and to identify what the third admitted. It proceeds accordingly.

Three arrangements coexisted. Court employment and ecclesiastical employment provided salaried positions with defined duties. Publication supplied income from the sale of printed music to amateur purchasers. Commercial theatrical performance supplied income from paying audiences.

The third arrangement is the one bearing most directly upon the argument. The Teatro San Cassiano at Venice opened to a paying public in 1637, and further houses followed within a few years; the arrangement combined underwriting by wealthy families with income from ticket-holders, and the Carnival season supplied the audience.³

Claim 30.3.1. (Admission of a configuration by a change in provisioning). *Provisioning by paying audiences admitted configurations requiring assembled forces beyond what a single patron would sustain, and the configuration became available at the date the arrangement was established without any alteration in material or technical conditions.*

The claim is an instance of the form fixed in Chapter 27: a constituent altered along the economic dimension, and a previously excluded configuration became admitted. It also exhibits the distinction between admission and adoption, since the arrangement admitted configurations that particular houses did not realise.

³Rosand, *Opera in Seventeenth-Century Venice*. The number of houses operating in Venice across the century varies among the sources consulted and stands on the verification list; the sources agree that several were operating within a few years of 1637.

30.4 Political and Institutional Conditions

This section treats regulation and establishment.

Court and ecclesiastical establishments maintained musical bodies with defined personnel and duties, and their records supply the evidence for Section 5. Confessional division bore upon liturgical practice and upon what forces were admitted to worship in different jurisdictions. Theatrical performance was subject to licensing and to seasonal regulation.

30.5 Social Structure and the Division of Musical Labour

This section treats positions and their terms.

Musicians held positions ranging from salaried service within a household or chapel to engagement for a season. Training proceeded through apprenticeship, through chapel choir schools, and in some jurisdictions through charitable institutions.

Access was differentiated by sex, and the differentiation bore upon where women's musical practice occurred. Convent music-making and the musical establishments of charitable institutions are the documented sites of women's practice in this period, and their records are the principal evidence.

30.6 The Cultural and Theoretical Field

This section treats the accounts participants gave of their practice.

Theoretical writing of the period treats the bass as the foundation of the musical texture, and the treatises supply the rules by which figures are realised. Writing on affect and on rhetoric supplies the vocabulary in which the relation between musical material and its effect was discussed.

The theoretical apparatus of functional harmony belongs to a later period, and its application to this repertory is a retrojection of the kind Chapter 8 warned against. The chapter describes the configuration by the functions its coordinating centre performed, in the terms fixed there.

30.7 The Relational Architecture

This section supplies the chapter's principal content. Its objective is to describe the configuration in the terms of Part II and to establish what the figured bass notates. It proceeds by treating the notated layer, the realised layer, the temporal and textural organisation, and the distribution of adjudicative position.

The notated layer of a continuo part comprises a bass line with figures. The figures specify intervals to be sounded above the bass. What they specify is accordingly a *relation*: the interval

is a relation between the bass and something to be supplied, and the notation fixes the relation while leaving the sounding events unspecified.

Claim 30.7.1. (Notation of a relation in the figured bass). *The figures of a continuo part specify intervals above a notated bass, so that the notated layer fixes relations and leaves unspecified the sounding events realising them, including their register, their number, their disposition and their movement.*

The claim distinguishes this notational practice from those treated elsewhere in this book. The notations of Chapters 21 and 16 specify melodic figures or their shape; the notation of Chapter 23 specifies pitch values attached to syllables. The figured bass specifies neither, and specifies the relation directly.

The realised layer is supplied by the performer, and the scholarship establishes that realisation varied by instrument, by place, by occasion and by performer, ranging from plain harmonisation to elaborate contrapuntal working. The evidential situation is recorded: written-out realisations survive chiefly as teaching demonstrations and exercises, so that period realisation is reconstructed from an exiguous base.

Claim 30.7.2. (Structural identity with the cases of Part III). *The relation between a notated figured bass and its realisations exhibits the structure assembled in Chapter 26, in which a fixed layer transmitted in writing admits materially divergent realisations transmitted by other means.*

The claim connects this chapter to the principal finding of Part III. Three ritual traditions supplied cases of a fixed textual layer with divergent realisations; the continuo supplies a fourth, from a wholly different setting, in which the fixed layer is notated musically and the divergence is a matter of documented professional practice, with communal transmission playing no part in it.

Temporal organisation is referenced in the sense of Chapter 6 across most of the repertory, with the bass supplying the reference. Textural organisation ranges from few independent parts to many, and the notated layer sustains the texture while admitting variation within it.

Adjudicative position is distributed within the sounding body. Direction proceeded from the keyboard, from the leading string player, or from both, and the party adjudicating whether the delivery proceeded correctly was a party producing sound. Chapter 33 treats the alteration of this arrangement and supplies its evidence.

30.8 The Problem Generated and What It Opened

This section states the succeeding problem.

The configuration described placed a determinate portion of the sounding organisation in the hands of realising performers. The arrangement requires that those performers possess the competence to realise, that the realisation be acceptable to the other parties, and that the divergence among realisations be tolerable to those who composed the notated layer.

Each requirement generates a pressure toward fuller specification. Where competence

cannot be assumed, specification substitutes for it; where divergence exceeds what a composer accepts, specification constrains it; where forces assemble from parties trained differently, specification supplies what common acquisition would otherwise supply.

Claim 30.8.1. (Generation of the specification problem). *A configuration placing part of the sounding organisation in the hands of realising performers generates a pressure toward fuller notational specification wherever competence, acceptability or common training cannot be assumed.*

The claim states the endogenous mechanism of Chapter 27 for this configuration, and identifies the thread that Chapters 31 to 34 follow.

30.9 Summary of Results

This chapter has established the following. The figured bass specifies intervals above a notated bass and thereby notates relations while leaving the sounding events realising them unspecified, which distinguishes it from the notational practices treated elsewhere in this book. The relation between the notated bass and its realisations exhibits the fixed-layer and variable-layer structure assembled in Chapter 26, supplying a fourth case from a setting unrelated to the three ritual cases. Provisioning by paying audiences, established at Venice from 1637, admitted configurations that patronage had excluded, without any alteration in material or technical conditions. Adjudication of performance was exercised from within the sounding body, by parties producing sound. The configuration generates a pressure toward fuller notational specification wherever competence, acceptability or common training cannot be assumed, and that pressure is the thread the following chapters follow.

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Chapter 31

The Classical Configuration and the Recession of the Realising Performer

This chapter treats the second of the five Western configurations. Its role is to describe the configuration in which the arrangement of Chapter 30 was altered at two points: the layer supplied by realising performers contracted, and provisioning by paying audiences extended from theatrical performance to instrumental concerts. It undertakes to establish four things: that the contraction of the realised layer is documented and is the first stage of the specification thread opened in Chapter 30; that subscription and ticketed concert-giving altered the economic constituent and admitted configurations that court establishments had excluded; that the formal organisation of the period is describable in the terms of Chapter 8 without the apparatus of later theory; and that the configuration generated a coordination problem which the succeeding configuration answered. It follows the template of Chapter 28.

31.1 The Configuration in Outline

This section identifies what the chapter treats.

The configuration obtained in European musical practice across roughly the second half of the eighteenth century and the opening of the nineteenth. The practices comprised are court and ecclesiastical music-making, theatrical performance, public and subscription concert-giving, and domestic music-making supported by publication.

The documentation comprises notated sources, surviving instruments, treatises, publishers' records, concert advertisements and subscription lists, the records of musical establishments, and correspondence.¹ Sound is unavailable, and claims about sound in this chapter are reconstructions in the sense of Chapter 13.

¹On concert institutions and programming across this configuration and the next, see William Weber, *The Great Transformation of Musical Taste: Concert Programming from Haydn to Brahms* (Cambridge: Cambridge University Press, 2008), and Weber, *The Rise of Musical Classics in Eighteenth-Century England* (Oxford: Clarendon Press, 1992). On the social production of a composer's standing within this configuration, see Tia DeNora, *Beethoven and the Construction of Genius: Musical Politics in Vienna, 1792–1803* (Berkeley: University of California Press, 1995).

31.2 Material and Technical Conditions

This section treats the material dimension.

Keyboard practice moved from plucked to struck action across the period, and the instruments of the latter kind admit gradation of loudness under the player's control, which the former admits by other means. Wind instrument construction moved toward standardisation, and the practical consequence is that a composer writing for an ensemble could assume a narrower range of variation among the instruments that would sound the parts.

Claim 31.2.1. (Standardisation as a condition on notation). *Standardisation of instrument construction narrows the variation a composer must accommodate, and thereby admits notation specifying what a part is to sound in detail sufficient to be executed by instruments the composer has not encountered.*

The claim connects the material dimension to the specification thread. Detailed specification requires that the specification be executable, and executability across unknown instruments requires that the instruments be alike.

31.3 Economic Organisation

This section treats provisioning. Its objective is to identify the arrangement whose extension characterises this configuration and to state what it admitted.

Court and ecclesiastical employment continued. Publication expanded, supported by a domestic market for arrangements of works composed for larger forces. The arrangement distinguishing the configuration is the extension of paying access from theatrical performance to instrumental concert-giving, through subscription series and single ticketed events.

Claim 31.3.1. (Extension of paying access to instrumental performance). *The extension of subscription and ticketed access from theatrical to instrumental performance admitted the assembly of instrumental forces on occasions unsupported by a court or ecclesiastical establishment, and the admission followed from an alteration along the economic dimension alone.*

Two consequences bear upon the argument. An ensemble assembled for a concert series is assembled from parties engaged for the occasion, which bears upon the coordination problem treated in Section 7. And a composer writing for such an occasion writes for parties whose competences are unknown in advance, which bears upon the specification thread.

31.4 Political and Institutional Conditions

This section treats regulation and establishment.

Court establishments continued and, across the period, several were reduced or dissolved, with consequences for the employment of the musicians attached to them. Theatrical perfor-

mance remained subject to licensing. Concert-giving was subject to civic authority in respect of premises and occasions.

The legal position of composed music altered across the period in several jurisdictions, and the alteration bears upon the economic arrangements of Section 3. The details differ by jurisdiction and are treated in the scholarship cited in Chapter 29.

31.5 Social Structure and the Division of Musical Labour

This section treats positions and their terms.

Musical labour in this configuration divides between salaried service and engagement. Salaried service within a household or establishment carried defined duties and tenure. Engagement for a concert series or a season carried neither, and supplied the personnel for the ensembles of Section 3.

The composer's position altered across the period, with the documented shift running from salaried service toward a combination of commissions, publication income, teaching and benefit concerts. The alteration is well documented and is treated in the scholarship; its bearing here is that a composer paid by publication and commission supplies notated material to parties the composer does not employ.

Claim 31.5.1. (Separation of the composing and performing parties). *Provisioning by publication and commission separates the party supplying the notated material from the parties engaged to sound it, so that the notated material becomes the principal channel between them.*

The claim identifies the condition under which the specification thread tightens. Where a composer directs the performance, specification substitutes for nothing; where the composer is absent, the notated material carries what direction would otherwise supply.

31.6 The Cultural and Theoretical Field

This section treats the accounts participants gave of their practice.

Writing of the period treats taste, judgement and the assessment of works, and a critical literature addressed to a concert-going public developed alongside the concerts. Theoretical writing treats the disposition of material within a movement.

The apparatus by which the formal organisation of this repertory is now customarily described was assembled in the nineteenth century, after the repertory it describes. Chapter 29 recorded the general hazard, and Chapter 30 recorded an instance of it. The present chapter describes the formal organisation in the terms of Part II.

31.7 The Relational Architecture

This section supplies the chapter's principal content. Its objective is to describe the configuration in the terms of Part II, and to state the two alterations distinguishing it from Chapter 30. It proceeds by treating the coordinating centre, the textural organisation, the contraction of the realised layer, and the distribution of adjudicative position.

The coordinating centre of this repertory performs the four functions distinguished in Chapter 8. It supplies resolution, in that a passage may conclude upon it; orientation, in that material is describable by its relation to it; long-range organisation, in that departure from and return to it organise spans exceeding the phrase; and expectation, in that competent hearers anticipate continuations by reference to it.

The fourth function warrants notice, since Chapter 8 established that the functions are separable. Where expectation is established, its delay and withholding become available as resources, and a practice may organise long spans by the management of an expectation it has itself established.

Textural organisation admits independent delivery in the sense of Chapter 7, with parties sounding distinct material related by answering, complementation and sustaining. The number of parties is moderate and the number of distinguishable strands is smaller, in the manner Chapter 7 required be kept distinct.

The contraction of the realised layer is the alteration bearing most directly upon the argument. Across the period the continuo part receded from instrumental practice, and the material formerly supplied by a realising performer was supplied by notation assigning it to specified parties.

Claim 31.7.1. (Transfer of a realised layer into notated specification). *Material formerly supplied by a realising performer from a figured bass was, across this configuration, supplied by notation assigning determinate parts to specified parties, so that a layer previously variable across performances became fixed by the notated material.*

The claim states the first stage of the thread opened in Chapter 30, and its consequence for the structure identified there is direct. The fixed-layer and variable-layer arrangement that Chapter 30 found structurally identical to the cases of Chapter 26 contracted at its variable end.

Adjudicative position remained distributed within the sounding body across most of this configuration. Direction proceeded from the keyboard, from the leading string player, or from both, and Chapter 33 treats the documented persistence of this arrangement into the following configuration together with the evidence for its alteration.

31.8 The Problem Generated and What It Opened

This section states the succeeding problem.

Two features of the configuration generate it jointly. Ensembles assembled from parties engaged for an occasion cannot coordinate by common acquisition in the sense of Chapter 6, since the parties have acquired their practice separately. And notation specifying determinate parts for specified parties requires that the parties execute the specification together.

Claim 31.8.1. (Generation of the coordination problem). *An ensemble assembled from separately trained parties, executing notation specifying determinate parts, confronts a coordination problem that neither common acquisition nor direction from within a small body reliably solves as the number of parties increases.*

The claim identifies what the following configuration answered. Chapter 32 treats the conditions obtaining when the number of parties increased, and Chapter 33 treats the arrangement adopted.

31.9 Summary of Results

This chapter has established the following. Standardisation of instrument construction narrows the variation a composer must accommodate and thereby admits notation detailed enough to be executed by instruments the composer has not encountered. The extension of subscription and ticketed access from theatrical to instrumental performance admitted the assembly of instrumental forces on occasions unsupported by an establishment, through an alteration along the economic dimension alone. Provisioning by publication and commission separates the composing from the performing parties, so that notated material becomes the principal channel between them. Material formerly supplied by a realising performer was, across this configuration, supplied by notation assigning determinate parts to specified parties, contracting the variable layer of the arrangement described in Chapter 30. Adjudicative position remained distributed within the sounding body. The configuration generates a coordination problem for ensembles assembled from separately trained parties executing detailed specification, which the following configuration answered.

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Chapter 32

The Romantic Configuration and the Institutions of an Enlarged Ensemble

This chapter treats the third of the five Western configurations. Its role is to describe the conditions under which the ensemble enlarged, the institutions that trained and provisioned it, and the alteration in adjudicative position that accompanied them. It undertakes to establish four things: that industrialised instrument manufacture, the purpose-built hall and the conservatory altered three distinct constituents of the field and admitted configurations previously excluded; that the enlargement of the ensemble is a change in composition, whose consequences for coupling structure require separate demonstration; that the coordinating centre acquired an extended range of orientation while retaining its other functions; and that the coordination problem generated in Chapter 31 was answered by an arrangement whose emergence Chapter 33 documents. It follows the template of Chapter 28.

32.1 The Configuration in Outline

This section identifies what the chapter treats.

The configuration obtained in European and North American musical practice across roughly the nineteenth century. The practices comprised are orchestral and choral concert-giving, operatic performance, the recital, domestic music-making, and the institutions of training and publication supporting them.

The documentation is dense. It comprises notated sources, surviving instruments, manufacturers' records, hall designs and building accounts, concert programmes and reviews, the archives of orchestral societies and conservatories, contracts, correspondence and memoirs.¹ Sound remains unavailable for most of the period, and recorded sound enters at its close.

¹On instrument manufacture and the trade, see Cyril Ehrlich, *The Piano: A History*, rev. ed. (Oxford: Clarendon Press, 1990); on employment, training and the profession, Ehrlich, *The Music Profession in Britain since the Eighteenth Century: A Social History* (Oxford: Clarendon Press, 1985); on the institution of the orchestra before this configuration, John Spitzer and Neal Zaslaw, *The Birth of the Orchestra* (Oxford: Oxford University Press, 2004).

32.2 Material and Technical Conditions

This section treats the material dimension. Its objective is to identify three technical alterations and to state what each admitted.

Valve and key mechanisms altered the aerophones, admitting the execution of material that the earlier instruments excluded, and admitting it from parties whose competence could be assumed from training, with no need of acquisition for the occasion.

Iron framing altered the keyboard instrument, admitting greater string tension and a consequent enlargement of dynamic range.

Manufacture moved toward industrial organisation, with the consequence that instruments were produced to closer tolerances and in greater numbers.

Claim 32.2.1. (Joint admission by mechanism and manufacture). *Mechanical alteration of instruments admitted material previously excluded by material constraint, and industrial manufacture admitted its execution by parties trained on instruments of narrow variation, so that two constituents altered jointly.*

The claim exhibits a feature of this configuration recurring throughout the chapter: its alterations are joint, and single-constituent explanations are unavailable.

32.3 Economic Organisation

This section treats provisioning.

Concert-giving became an enterprise with capital requirements: halls, standing ensembles, and the administration of subscription and single-ticket sale. The touring performer became an economic figure, supported by transport, by publicity and by the market for tickets.

Legal instruments governing composed music developed across the period in several jurisdictions, supplying income from performance and from reproduction. The arrangements differ by jurisdiction and their history is treated in the scholarship.

Claim 32.3.1. (Capital requirement as a source of exclusion). *An ensemble of enlarged composition performing in a purpose-built hall requires capital that occasional provisioning does not supply, so that the configuration is excluded from fields lacking a standing enterprise or a subsidising authority.*

The claim identifies the economic constituent bearing upon the enlargement of Section 7, and it is the form of exclusion fixed in Chapter 10.

32.4 Political and Institutional Conditions

This section treats regulation, establishment and training.

Conservatories were founded across the period in numbers, and their consequence for

the argument is direct: they supply parties trained to a common standard, in numbers, on instruments of narrow variation.

State and municipal authorities supported musical institutions in several jurisdictions, and national institutions were founded with cultural purposes attached to them. The purposes attached are treated in Section 6 as part of the cultural field, and this book takes no position on them.

Claim 32.4.1. (Conservatory training as a condition on ensemble assembly). *Systematic conservatory training supplies parties whose competences are known in advance and common across the body, which admits the assembly of an enlarged ensemble from parties who have not previously performed together.*

The claim is the institutional counterpart of the material claim of Section 2, and the two together constitute the condition for the enlargement treated in Section 7.

32.5 Social Structure and the Division of Musical Labour

This section treats positions and their terms.

Orchestral employment became a defined occupation with graded positions, terms of engagement and, across the period, collective organisation. The division of labour within the ensemble hardened, with parts assigned by position and position by competence and seniority.

The party adjudicating performance emerged as a distinct occupation in this configuration, and Chapter 33 treats its emergence.

Access to performance remained differentiated by sex and by social position, and the documented sites of women's professional performance in this configuration are narrower than the range of instruments and positions the ensemble comprised.

32.6 The Cultural and Theoretical Field

This section treats the accounts participants gave of their practice.

A body of writing held that instrumental music without text or programme is the art's proper form and carries its content within its own relations. A contrary body held that music carries extra-musical content and that programmes and titles direct the hearer to it. The dispute is reported here as a dispute internal to the period's critical literature.

Historicism developed across the period, with the consequence that works of earlier periods entered concert repertoires and remained there. The consequence for the relational description is stated: a repertory retaining works composed under earlier configurations performs them under present conditions, so that the notated material of one configuration is sounded by the ensemble and institutions of another.

Claim 32.6.1. (Divergence of composition from performance conditions). *Where a repertory retains works composed under earlier configurations, the conditions of their performance are those of the retaining configuration, and a description of the sounding organisation describes the later conditions.*

The claim bears on Chapter 44 and on every use of recorded sound in this book.

32.7 The Relational Architecture

This section supplies the chapter's principal content.

The ensemble enlarged in composition, in the sense fixed in Chapter 9: more sounding bodies, of more kinds, were present. Chapter 9 established that composition, functional assignment and coupling structure are independent, and the establishment governs this section.

Claim 32.7.1. (Enlargement as a change in composition). *The documented enlargement of the nineteenth-century ensemble is a change in its composition, and its consequences for functional assignment and for coupling structure require separate demonstration.*

Two consequences may be stated on the evidence. Timbral differentiation increased with the range of sounding bodies present, which supplies the resource identified in Chapter 9 for sustaining differentiation among simultaneous parties. And the number of parties standing in relations of dependence upon a single adjudicating position increased, which is the subject of Chapter 33.

A third consequence is frequently asserted and is withheld here. That the enlargement increased the relational complexity of the ensemble does not follow from the enlargement, by the claim above, and the evidence assembled in this book does not establish it.

The coordinating centre retained the four functions distinguished in Chapter 8 across most of the repertory, and its range of orientation extended: material at greater remove from the centre remained describable by its relation to it. The extension bears upon the succeeding configuration, since a function extended toward its limit is a function whose loss becomes conceivable.

Temporal organisation remained referenced in the sense of Chapter 6, and the reference was supplied increasingly from the adjudicating position.

32.8 The Problem Generated and What It Opened

This section states the succeeding problem.

The configuration extended the range over which the coordinating centre orients material. Where the range extends, the relation between a passage and the centre becomes attenuated, and the question arises what organises a passage whose relation to the centre no longer determines its placement.

Claim 32.8.1. (Generation of the coherence problem). *Extension of the range over which a*

coordinating centre orients material attenuates the relation between material and centre, and generates the question of what organises material whose placement the centre no longer determines.

Chapter 34 treats the configuration in which the centre ceased, in a portion of the repertory, to perform its functions, and treats what was proposed in its stead.

32.9 Summary of Results

This chapter has established the following. Mechanical alteration of instruments and industrial manufacture admitted jointly what neither admitted alone, so that single-constituent explanations are unavailable for this configuration. Capital requirement is a source of exclusion for enlarged ensembles in purpose-built halls. Systematic conservatory training supplies parties of known and common competence, which admits assembly of an enlarged ensemble from parties who have not performed together. Where a repertory retains works of earlier configurations, their performance conditions are those of the retaining configuration. The documented enlargement of the ensemble is a change in composition, and the assertion that it increased relational complexity does not follow from it and is withheld. The coordinating centre retained its four functions while extending its range of orientation, which generates the question of what organises material whose placement the centre no longer determines.

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Chapter 33

The Emergence of Adjudication from Outside the Sounding Body

This chapter discharges an obligation entered in Chapter 52 and recorded in Chapter 28. Its role is to supply the dated evidence for a transformation in which adjudication of a performance passed from a position within the sounding body to a position outside it, held by a party producing no sound. It undertakes to establish four things: that the prior arrangement is documented and comprised direction from the keyboard, from the leading string player, or from both; that period testimony records both the arrangement and dissatisfaction with it; that three incompatible scholarly accounts of the transition are current, and that this book adopts none of them; and that what survives the disagreement is sufficient for the claim Chapter 52 advanced. It proceeds in six sections.

33.1 The Prior Arrangement of Direction

This section describes the arrangement that preceded the transformation. Its objective is to establish that direction was exercised from within the sounding body and to identify the positions exercising it.

The standard account of the orchestra before the nineteenth century is that of Spitzer and Zaslaw, whose study treats the institution from the middle of the seventeenth century to 1815.¹ Two positions exercised direction, singly or together: a keyboard player realising a continuo part, and the leading string player, who indicated placement by bodily motion and by the motion of the bow while playing.

Both positions are within the sounding body in the sense of Chapter 52: the party exercising direction produced sound, and the direction was exercised in the course of producing it.

Spitzer and Zaslaw record the leading player's standing as first among equals, and record that musicians of the period were disposed toward direction by example in preference to direction by command. The observation bears directly upon the argument, since it reports the arrangement as one the parties preferred, and not merely one they had yet to improve upon.

Claim 33.1.1. (Documented character of the prior arrangement). *Direction of ensemble perfor-*

¹John Spitzer and Neal Zaslaw, *The Birth of the Orchestra: History of an Institution, 1650–1815* (Oxford and New York: Oxford University Press, 2004).

mance before the nineteenth century was exercised from positions within the sounding body, by parties producing sound in the course of exercising it, and the arrangement is reported in the scholarship as one the participating musicians favoured.

33.2 Period Testimony to the Arrangement and to Dissatisfaction With It

This section presents period evidence. Its objective is to exhibit the arrangement and the dissatisfaction in the words of parties present, and to fix the standing of each document.

Two documents are used and their standing differs.

Louis Spohr's autobiography states that he introduced direction by baton at the London Philharmonic Society in 1820, and describes the prior practice there as divided between a keyboard player following the score and the leading violinist who indicated placement with the bow.² The document is a memoir written after the events and asserting the author's priority, and it is used here as evidence of the prior arrangement and not as establishing the priority it claims.

Ignaz Moscheles, writing of London concerts about a decade later, describes an arrangement in which the conductor sat at the piano and, lacking a baton, exercised no influence over the body, which was under the command of the leading violinist, with the consequence that the delivery was unsteady.³

The second document is the more useful, for two reasons. It reports the arrangement as obtaining, which is evidence about practice, and it leaves priority untouched. It reports a party's assessment that the arrangement produced unsteadiness, which is evidence that the coordination problem identified in Chapter 31 was perceived by parties within the practice.

Claim 33.2.1. (Period perception of the coordination problem). *Testimony of the early nineteenth century reports that direction exercised from within the sounding body was producing unsteady delivery in an enlarged ensemble, so that the problem the succeeding arrangement answered was one participants had identified.*

33.3 Three Accounts of the Transition

This section presents the scholarly disagreement, in accordance with the practice fixed in Chapter 5. Its objective is to state three incompatible positions with their proponents and grounds, and to record that this book adopts none.

The first position treats a single introduction as decisive, resting on Spohr's claim for London in 1820. It is current in reference literature and is contested on the ground that the claim is the author's own and that other instances of baton use are recorded.

²Louis Spohr, *Selbstbiographie*. The date is given as 1820 and varies among the accounts; the exact date and the priority claim stand on the verification list.

³Charlotte Moscheles, ed., *Recent Music and Musicians, as Described in the Diaries and Correspondence of Ignatz Moscheles*, trans. A. D. Coleridge (New York: Henry Holt, 1873), p. 166. The wording follows the published translation.

The second position treats the transition as gradual across roughly 1820 to 1840, proceeding unevenly across cities, with London conservative into the 1830s and continental centres earlier. It is the position of the narrative and interpretive scholarship, and it is supported by the Moscheles testimony among other documents.⁴

The third position distinguishes the baton time-beater from the conductor as interpreter, and locates the emergence of the second later, in the theoretical codification of the later nineteenth century.⁵ On this account the relevant transformation is not the arrival of the baton but the constitution of the directing party as one whose reading of a work is the object the performance realises.

Requirement 33.3.1. (Standing of the three accounts). *The three accounts of the transition are stated with their proponents and grounds, this book adopts none of them, and any claim depending upon a particular dating is marked as conditional upon that account.*

33.4 What Survives the Disagreement

This section states what the evidence establishes independently of the disagreement. Its objective is to identify the claim Chapter 52 requires and to show that all three accounts supply it.

The three accounts differ over the date, the decisiveness of particular introductions, and the identity of the transformation. They agree on three matters.

They agree that before the nineteenth century, direction was exercised from within the sounding body by parties producing sound. They agree that by the middle of the nineteenth century, direction of enlarged ensembles was commonly exercised by a party producing no sound. And they agree that the change occurred within the century and was associated with the enlargement of the ensemble and with the conditions treated in Chapter 32.

Claim 33.4.1. (Transformation established independently of the disputed dating). *The passage of adjudicative position from within the sounding body to a party producing no sound is established by all three accounts of the transition, which differ over its date, its decisive instances and its identity, so that the claim advanced in Chapter 52 does not depend upon adjudicating among them.*

The claim discharges the obligation entered in Chapter 28. Its significance for Part VI is that the occupancy of the position of confirmation altered within a documented practice, which supplies the variation that Chapter 53 reported as generally unavailable.

⁴Elliott W. Galkin, *A History of Orchestral Conducting: In Theory and Practice* (Stuyvesant, NY: Pendragon Press, 1988); José Antonio Bowen, "The rise of conducting," in Bowen, ed., *The Cambridge Companion to Conducting* (Cambridge: Cambridge University Press, 2003), ch. 8.

⁵Richard Wagner, *Über das Dirigieren* (Leipzig, 1869); José Antonio Bowen, "Mendelssohn, Berlioz, and Wagner as Conductors: The Origins of the Ideal of 'Fidelity to the Composer'," *Performance Practice Review* 6, no. 1 (1993): 77–88, DOI 10.5642/perfpr.199306.01.04.

33.5 The Arrangement Described Relationally

This section describes the new arrangement in the terms of Part II. Its objective is to state what the party producing no sound supplies and what the arrangement alters in the coupling structure.

The party occupying the position supplies a reference, in the sense of Chapter 6, visible to all parties and independent of any party's sounding. The reference is supplied continuously and is not itself sounded, which distinguishes it from the pacing instruments of Chapters 14 and 15.

Claim 33.5.1. (Supply of an unsounded reference). *An adjudicating party producing no sound supplies a temporal reference available to every party and constituted independently of the sounding, which no arrangement treated elsewhere in this book supplies.*

The claim identifies what is novel in the arrangement, and it is worth stating precisely because the novelty is easily misplaced. Reference-based coordination is not novel; Part III documented it in traditions of considerable age. What is novel is that the reference is supplied by a party outside the sounding organisation, so that the reference and the sounding are constituted separately.

Two consequences for coupling structure follow, and the second is the one bearing on Part VI. Parties may coordinate without attending to one another, since each may attend to the reference. And adjudication of whether a party's contribution is correct is exercised from a position that contributes nothing to the sounding, so that the adjudicating party is not itself subject to the adjudication it exercises.

33.6 Summary of Results

This chapter has established the following. Direction of ensemble performance before the nineteenth century was exercised from within the sounding body, by parties producing sound, and the scholarship reports the arrangement as one musicians of the period favoured. Period testimony of the early nineteenth century reports both the arrangement and a perception among participants that it was producing unsteady delivery in enlarged ensembles. Three incompatible accounts of the transition are current and this book adopts none, marking as conditional any claim depending upon a particular dating. All three accounts nonetheless establish that adjudicative position passed from within the sounding body to a party producing no sound within the nineteenth century, which discharges the obligation entered in Chapter 52 without adjudicating among them. The arrangement supplies a temporal reference constituted independently of the sounding, which no other arrangement treated in this book supplies, and it admits coordination among parties each of whom attends to the reference alone.

Chapter 34

The Modernist Configuration and the Withdrawal of a Coordinating Centre

This chapter treats the fourth of the five Western configurations, and it is the one in which the argument of this book has most at stake. Its role is to describe a configuration in which the coordinating centre described in Chapter 8 ceased, across a portion of the repertory, to perform its functions, and to state what was proposed in its stead. It undertakes to establish four things: that recording altered the evidential situation and the practice it recorded; that the withdrawal of the centre is describable as the loss of specified functions, which the apparatus of Chapter 8 supplies without ranking; that the arrangements proposed to organise material in the centre's absence differ in whether they supply what the centre supplied; and that a scholarly dispute over the perceptibility of one such arrangement bears directly upon the criterion of Chapter 4 and is left unadjudicated. It follows the template of Chapter 28.

34.1 The Configuration in Outline

This section identifies what the chapter treats.

The configuration obtained across roughly the first half of the twentieth century, and the practices comprised are concert and operatic performance, the composition of works for those settings, broadcasting, and commercial recording.

The documentation differs in kind from that of the preceding chapters. Recorded sound is available in quantity from the opening of the period, and its availability supplies evidence about performance that earlier configurations do not supply. The methodological caution of Chapter 13 governs its use, and Chapter 32 recorded the further caution that a recording of a work composed earlier documents the performance conditions of the recording's date.

34.2 Material and Technical Conditions

This section treats the material dimension.

Recording fixed a performance as an object that could be repeated without the performers. Broadcasting distributed a performance to hearers at a distance from the sounding and from one another. Both are alterations along the reproductive dimension fixed in Chapter 27.

Claim 34.2.1. (Admission of the repeated performance). *Recording admits the repetition of a particular performance in the absence of the performing parties, and thereby admits a relation between a hearer and a performance which no prior configuration admitted.*

The claim identifies a genuinely novel admission, and its consequences are treated in Section 7 and in Chapter 35.

A second consequence bears upon performance itself. A performance that will be fixed and repeated is subject to assessment across repetitions, and the documented consequences for performance practice are treated in the scholarship on recording.¹

34.3 Economic Organisation

This section treats provisioning.

The recording industry established an arrangement in which income derives from the sale of fixed performances. Broadcasting established a second, in which income derives from the sale of access or from public provision. Concert-giving continued alongside both.

Composition for the concert repertory came, across the period and in several jurisdictions, to depend upon subsidy, foundation support and institutional employment, since works for which the ticketed audience was small could be provisioned in no other way.

Labour organisation among performing musicians developed in this period, and the dispute over recording is the instance bearing most directly upon the argument. A prolonged dispute in the United States, beginning in 1942 and settled with different companies in 1943 and 1944, concerned payment for recorded performance and prohibited union musicians from making commercial recordings while it lasted.²

Claim 34.3.1. (Contest over the fixed performance). *The dispute over payment for recorded performance is a contest over the terms on which a performing party's contribution may be fixed and repeated in that party's absence, which is a relation the configuration newly admitted.*

The claim connects the labour history to the material one, and it exhibits the general point that a newly admitted relation requires terms, which are settled by contest and not by the technology admitting it.

34.4 Political and Institutional Conditions

This section treats regulation and establishment.

Musical institutions in several jurisdictions received public support in this period, and in several the support was accompanied by direction as to the styles and works supported. The arrangements differed by jurisdiction and their histories are treated in the scholarship. This

¹Nicholas Cook, *Beyond the Score: Music as Performance* (New York: Oxford University Press, 2013); Daniel Leech-Wilkinson, *The Changing Sound of Music* (2009).

²Details of the dispute, its dates and its settlements stand on the verification list.

book reports that such arrangements obtained and takes no position upon them.

Academic institutions became employers of composers and sites of compositional training, which supplies for composition the arrangement that Chapter 32 recorded for performance.

Displacement of musicians and interruption of institutions occurred in this period on a substantial scale, and Chapter 13 recorded institutional reconstitution as one of the processes reshaping documented practice.

34.5 Social Structure and the Division of Musical Labour

This section treats positions.

Orchestral employment continued as a defined occupation with organised representation. Recording introduced a further class of engagement, and the terms of that engagement are the subject of Section 3.

A division opened between the audience for the concert repertory of the preceding configuration and the audience for newly composed work, and the division bears upon the economic arrangements of Section 3.

The separation of an art field from a popular field became institutional in this period, with distinct training, distinct venues, distinct economic arrangements and distinct critical literatures. The separation is a fact about institutions and carries no ranking, by the prohibition fixed in Chapter 5.

34.6 The Cultural and Theoretical Field

This section treats the accounts participants gave of their practice.

Analysis became an academic discipline in this period, with the consequence that the apparatus applied to musical material was produced within institutions employing its producers.

Compositional programmes were stated in manifestos and treatises, and works were presented together with accounts of the principles organising them. The presentation matters for Chapter 44, since it supplies cases in which a meaning is ascribed to musical material by a party in a position to have it recorded.

34.7 The Relational Architecture

This section supplies the chapter's principal content. Its objective is to describe the withdrawal of the coordinating centre in the terms of Chapter 8, to enumerate the arrangements proposed in its stead, and to state what each supplies. It proceeds accordingly.

Chapter 8 distinguished four functions a coordinating centre may perform, and established that they are separable. The apparatus permits the change treated here to be described

without ranking.

Claim 34.7.1. (Description of the withdrawal as loss of specified functions). *Across a portion of the repertory of this configuration, the pitch reference ceased to perform the functions of resolution, of orientation, of long-range organisation and of expectation, and the change is describable as the loss of those functions without any practice being treated as an incomplete instance of another.*

Four arrangements were proposed to organise material in the absence of the centre, and they differ in what they supply.

Ordered pitch collections. A determinate ordering of the twelve pitch classes, subjected to specified operations, supplies a rule governing succession. It supplies no resolution, since no member of the ordering is a point at which a passage may conclude by the rule.

Relations among unordered collections. Collections of pitch classes related by specified operations supply relations of similarity and difference among the sounding combinations, and supply orientation of a kind, since a combination is describable by its relation to others.

Timbral and textural organisation. Where pitch relations no longer organise long spans, the succession of sonorities and densities may do so, and the resource is the one identified in Chapter 9.

Process. Where a determinate procedure generates the material, the procedure organises the span, and expectation attaches to the procedure, leaving a pitch reference no part in it.

Claim 34.7.2. (Partial replacement of the withdrawn functions). *The arrangements proposed in the absence of a pitch reference supply orientation and, in the case of process, expectation, and none of them supplies resolution in the sense fixed in Chapter 8.*

The claim is the chapter's principal result and it is stated as an observation about the arrangements, not as an assessment of the music organised by them. That no arrangement supplies resolution is a property of the arrangements, and Chapter 5 forbids treating the absence as a deficiency.

Adjudicative position in this configuration remains as Chapter 33 described it, with a party producing no sound supplying the reference, and the notated specification serving as a second occupant in the sense of Chapter 52. Specification reached its fullest extent in this configuration, with dynamic, articulation, duration and, in some scores, timbral production specified in detail.

34.8 The Perceptibility Dispute and Its Bearing on the Criterion of Operation

This section treats a scholarly dispute and states why it bears on the argument. Its objective is to present the positions with their grounds and to identify the connection to Chapter 4. It proceeds accordingly.

The dispute concerns whether the relations established by ordered pitch collections are available to hearers. One position holds that a hearer competent in a practice infers its or-

ganisation, and that an organisation whose relations cannot be so inferred fails to organise anything for the hearer; a version of this position holds that the operations upon an ordering are permutational and that permutational relations are not recovered in listening. A second position holds that the recovery of such relations is no condition of a hearer's engagement with the material, and that the organisation operates through properties other than the recovery of its generating relations.³

Requirement 34.8.1. (Standing of the perceptibility dispute). *The positions on the perceptibility of relations established by ordered pitch collections are stated with their grounds, this book adopts neither, and claims depending upon either are marked as conditional.*

The bearing on the argument is direct and is worth stating. Chapter 4 fixed the criterion of operation: a relation obtains within a practice where its alteration alters the practice. Applied to a compositional procedure, the criterion asks whether altering the procedure alters what parties do. It clearly alters what the composing party does, and it clearly alters what the performing parties execute. Whether it alters what an attending party registers is what the dispute concerns.

Claim 34.8.2. (Localisation of the dispute within the criterion). *The dispute over perceptibility concerns whether a compositional procedure operates upon the attending party, and leaves undisturbed that the procedure operates upon the composing and performing parties, so that the criterion of Chapter 4 is satisfied for two of the three classes of party irrespective of the dispute's resolution.*

The claim is offered as a clarification of what is at issue and not as a resolution. Its consequence for this book is that claims about the relational organisation of this repertory are made with respect to composing and performing parties, and claims with respect to attending parties are marked as conditional upon the dispute.

34.9 The Problem Generated and What It Opened

This section states the succeeding problem.

Two features of the configuration generate it. Recording fixed performances and thereby established a relation between a hearer and a performance that requires no assembly and no occasion. And the institutional separation of fields established distinct arrangements for provisioning, training and distribution.

Claim 34.9.1. (Generation of the distribution problem). *A configuration admitting the repetition of fixed performances in the absence of performing parties generates the question of how a musical*

³For the position that relations not recoverable in listening fail to organise anything for the hearer, see Fred Lerdahl, "Cognitive Constraints on Compositional Systems," in John A. Sloboda, ed., *Generative Processes in Music* (Oxford: Clarendon Press, 1988), 231–259. For the contrary position, that the recovery of generating relations is no condition of a hearer's engagement, see Milton Babbitt, "The Composer as Specialist," published as "Who Cares if You Listen?" in *High Fidelity* 8, no. 2 (February 1958), the published title having been substituted by the editor without the author's authority; and Allan F. Moore, "Serialism and Its Contradictions," *International Review of the Aesthetics and Sociology of Music* 26, no. 1 (1995): 77–95.

field is constituted where its parties are neither co-present nor contemporaneous.

Chapter 35 treats the configuration in which that question was answered by arrangements of production and distribution.

34.10 Summary of Results

This chapter has established the following. Recording admits the repetition of a particular performance in the absence of the performing parties, a relation no prior configuration admitted, and the terms of that relation were settled by contest between performing parties and the industry fixing their performances. Across a portion of the repertory the pitch reference ceased to perform the functions of resolution, orientation, long-range organisation and expectation, and the change is describable as the loss of specified functions without ranking any practice. Four arrangements were proposed in the centre's absence; they supply orientation and, in the case of process, expectation, and none supplies resolution, which is recorded as a property of the arrangements and not as a deficiency. The dispute over whether such organisation is recoverable by hearers is presented with its positions and left unadjudicated; it concerns operation upon the attending party alone, leaving operation upon composing and performing parties undisturbed. The configuration generates the question of how a musical field is constituted where its parties are neither co-present nor contemporaneous.

Chapter 35

The Post-War Configuration and the Constitution of a Delocalised Field

This chapter treats the last of the five Western configurations. Its role is to describe a configuration in which the musical field ceased to require the co-presence of its parties, and to state what follows for the description of such a field in the terms of Part II. It undertakes to establish four things: that amplification and electronic generation altered the relation between a performer's action and the resulting sound; that the studio established a site at which a sounding organisation is assembled from contributions made separately; that a field whose parties are neither co-present nor contemporaneous is describable by the apparatus of Chapter 10, with one modification; and that the art and popular fields separated in Chapter 34 are treated here as two arrangements without ranking. It follows the template of Chapter 28.

35.1 The Configuration in Outline

This section identifies what the chapter treats.

The configuration obtained from roughly the middle of the twentieth century to the present. The practices comprised are concert performance, studio production, broadcast and recorded distribution, and, in its later decades, distribution over networks.

The documentation is abundant and differs in kind again from that of the preceding chapters. Recorded sound is available in very large quantity, production materials survive, and the arrangements of distribution are documented commercially and legally.¹ The abundance carries its own hazard: what is documented is what was commercially distributed, and practices outside that channel are documented unevenly.

¹On the cultural history of sound reproduction, Jonathan Sterne, *The Audible Past: Cultural Origins of Sound Reproduction* (Durham: Duke University Press, 2003), and Sterne, *MP3: The Meaning of a Format* (Durham: Duke University Press, 2012); on recording and performance, Mark Katz, *Capturing Sound: How Technology Has Changed Music* (Berkeley: University of California Press, 2004), and Nicholas Cook, *Beyond the Score: Music as Performance* (New York: Oxford University Press, 2013).

35.2 Material and Technical Conditions

This section treats the material dimension. Its objective is to identify three alterations and to state what each admitted.

Amplification separates the loudness of a sound from the energy of the action producing it. The consequence for the relations of Chapter 9 is direct: a sounding body's dynamic range ceases to constrain its audibility against other bodies, and the balance among parties becomes a matter of adjustment.

Claim 35.2.1. (Separation of audibility from productive energy). *Amplification separates the audibility of a party's contribution from the energy of the action producing it, so that the relative prominence of parties within a sounding organisation becomes an adjustable parameter set outside the performing action.*

Electronic generation supplies sounding material without a sounding body in the sense of Chapter 9, and thereby removes the material constraints that chapter identified as bounding available relations.

Multitrack recording admits the assembly of a sounding organisation from contributions made at different times and places.

Claim 35.2.2. (Admission of asynchronous assembly). *Multitrack production admits a sounding organisation whose contributing parties act at different times and in different places, so that a configuration is admitted in which no party's action is constrained by another's action as it occurs.*

The claim identifies the alteration bearing most directly on this book, since Chapter 3 defined a musical relation as a dependence, and the dependence here is altered in kind: a party's contribution constrains a later party's, and the constraint operates through the fixed contribution and not through the acting party.

35.3 Economic Organisation

This section treats provisioning.

Income derived, across the earlier decades of the configuration, from the sale of recorded copies; across its later decades, from access arrangements and from advertising against distributed listening; and throughout, from live performance, which became for many parties the residual reliable arrangement.

Distribution over networks altered the relation between a producing party and a distributing party, and the terms of that relation are contested commercially and legally at the time of writing. This book reports that the arrangements obtain and takes no position on the disputes.

35.4 Political and Institutional Conditions

This section treats regulation and establishment.

Public provision for musical institutions continued in several jurisdictions. Legal instruments governing reproduction and distribution developed substantially, and their provisions bear directly upon the economic arrangements of Section 3.

Heritage designation, treated in Chapter 13 as one of the processes reshaping documented practice, obtained in this configuration and bears upon the traditions of Part III as much as upon those treated here.

35.5 Social Structure and the Division of Musical Labour

This section treats positions.

Two positions entered the division of labour in this configuration and neither existed in the preceding ones. A party controls the assembly and adjustment of a recorded sounding organisation without producing sound. A party operates the equipment of capture and reproduction.

Claim 35.5.1. (Entry of non-sounding positions into the productive division). *The configuration admits positions from which a sounding organisation is assembled and adjusted by parties producing no sound, and their contributions are constitutive of the resulting organisation.*

The claim connects to Chapter 33, and the connection warrants statement. That chapter identified the entry of a non-sounding party into the adjudicative position. The present chapter identifies the entry of non-sounding parties into the productive one. The two are distinct: the first adjudicates a sounding that others produce, the second participates in producing what is sounded.

The threshold of production fell in this configuration, since the equipment of assembly became available at costs a party may meet individually. The consequence is an increase in the number of parties producing distributed material, and a corresponding alteration in the arrangements of Section 3.

35.6 The Cultural and Theoretical Field

This section treats the accounts participants gave of their practice.

Genre became a category of commercial classification as well as of description, and its categories organise distribution, retail and, in the later decades, algorithmic recommendation.

The separation of art and popular fields recorded in Chapter 34 persisted institutionally while being disputed critically. This book treats the two as distinct arrangements of participation, as two arrangements of participation, and the prohibition of Chapter 5 forbids ranking them.

35.7 The Relational Architecture

This section supplies the chapter's principal content. Its objective is to describe the delocalised field in the terms of Chapter 10 and to state the modification the apparatus requires. It proceeds by treating the assembled organisation, the distributed hearing, and the modification.

An assembled organisation is constituted by contributions fixed at different times. The relations among the contributions are dependences in the sense of Chapter 3, since a later contribution is constrained by an earlier one, and the earlier one may be altered afterward, which alters the relation.

The alteration is of a kind the preceding configurations did not admit. In a co-present field, a party's contribution is constrained by another party's action as it occurs, and neither may be altered afterward. In an assembled field, a contribution is constrained by a fixed prior contribution, and both may be altered until the organisation is fixed as a whole.

Claim 35.7.1. (Reversibility of the constituting relations). *In an assembled sounding organisation the relations among contributions remain alterable until the organisation is fixed, so that the openness of relational determination described in Chapter 45 obtains over the production period and closes at fixation.*

The claim connects this configuration to the temporal account of Part V, and it identifies a genuine difference. Chapter 45 established that relations remain open while a field unfolds and close as it completes. Here the period of openness is the production period and its closure is an act, which no prior configuration admitted.

Distributed hearing constitutes a field whose attending parties are neither co-present with the performing parties nor with one another. Chapter 48 supplied the forms of dependence by which a party is present within a field, and the case is assessed against them: attending parties stand in dependence-upon, and the question is whether they stand in dependence-of.

Claim 35.7.2. (Attenuation of the dependence-of relation under distribution). *Where a fixed organisation is distributed to attending parties, those parties stand in dependence-upon and their registration bears upon the fixed organisation not at all, so that the grade of participation identified in Chapter 48 as available to a non-sounding party is unavailable within the occasion of hearing.*

The claim requires immediate qualification and receives it. Attending parties bear upon subsequent production, through the arrangements of Section 3 and through the aggregation of their listening. The bearing operates across occasions and not within one, and Chapter 48 fixed presence within a field. Whether an aggregate bearing across occasions constitutes participation in the sense fixed there is a question this book leaves open.

35.8 The Problem Generated and What It Opened

This section states the succeeding problem, which is a problem for the present.

The configuration has separated three things that earlier configurations held together: the occasion of production, the occasion of hearing, and the co-presence of parties. The question it generates concerns what a musical field is where its parties never assemble.

Claim 35.8.1. (Generation of the constitution problem). *A configuration in which production, hearing and co-presence are separated generates the question of what constitutes a musical field, and the apparatus of Chapter 10 answers it only by extending the temporal extent of a field beyond any occasion.*

The extension is available and its cost is recorded. A field extended over production and distribution comprises parties who never encounter one another, and the requirement of dependence fixed in Chapter 3 must then be assessed across long intervals and through fixed artefacts. Part VII treats the propagation question in these terms, and Part VIII treats the formal apparatus that a field so extended requires.

35.9 Summary of Results

This chapter has established the following. Amplification separates the audibility of a party's contribution from the energy producing it, making relative prominence an adjustable parameter set outside the performing action. Multitrack production admits an organisation whose contributing parties act at different times and places, so that a contribution is constrained by a fixed prior contribution and not by an acting party. Positions entered the productive division from which a sounding organisation is assembled by parties producing no sound, distinct from the adjudicative position identified in Chapter 33. In an assembled organisation the constituting relations remain alterable until fixation, so that the openness described in Chapter 45 obtains over a production period and closes by an act. Under distribution, attending parties stand in dependence-upon and their registration bears upon the fixed organisation not at all within the occasion of hearing, with bearing across occasions left as an open question. The configuration generates the question of what constitutes a musical field whose parties never assemble.

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Chapter 36

The East Asian Trajectory in Outline and the Character of Its Evidence

This chapter opens the East Asian portion of Part IV. Its role is to state what the following seven chapters treat, to establish the character of the evidence available for them, and to identify the questions on which the scholarship is divided. It undertakes to establish four things: that the periodisation employed follows dynastic divisions whose relation to musical change requires statement; that the evidentiary situation differs from that of the Western trajectory in a specifiable way, being richer in archaeological and administrative material and poorer in notated sound; that several questions bearing directly upon this Part are contested among scholars and are left open; and that the treatment covers China principally, with Japanese and Korean material entering at the documented points of transmission. It proceeds in five sections.

36.1 The Periodisation and Its Relation to Musical Change

This section treats the divisions employed. Its objective is to state their basis and to record the qualification they require.

The divisions employed in Chapters 37 to 43 follow dynastic and political periods. The basis is administrative and political, and the relation between such divisions and musical change requires statement, since the two need not coincide.

Two considerations support retaining them. Musical institutions in this trajectory were substantially state institutions, so that a change of administration bore directly upon the establishments provisioning musical practice, which is a relation of the kind Chapter 27 treats. And the scholarship is organised by these divisions, so that a private scheme would obstruct comparison with it.

Requirement 36.1.1. (Use of the dynastic divisions). *The dynastic divisions employed in the East Asian chapters mark administrative periods within which the configurations described obtained, and no claim is carried that musical change coincided with administrative change.*

36.2 The Character of the Evidence

This section states what evidence is available. Its objective is to identify how the evidentiary situation differs from that of the Western trajectory and to state the consequence.

Three classes of evidence are unusually strong in this trajectory.

Archaeological material supplies instruments recovered from datable contexts, and in one case supplies inscribed instruments recording a theoretical apparatus directly. Chapter 37 treats the case.

Administrative documentation supplies the establishment, provisioning and regulation of state musical institutions across a very long period, in histories compiled by successive administrations.

Theoretical and philosophical writing on music survives from an early date and in quantity, and supplies the articulated accounts that Chapter 11 identified as the evidentiary advantage of ritual settings.

One class is weak. Notation adequate to recover melodic material is scarce for the earlier periods, and the notations that survive require reconstruction whose results are contested.

Claim 36.2.1. (Complementary strength of the two trajectories' evidence). *The East Asian material supplies archaeological, administrative and theoretical evidence of a completeness the Western material does not supply for comparable periods, and supplies recoverable melodic material for those periods less well.*

The claim bears upon the comparative design of Chapter 28. Comparison between the trajectories is best supported where it concerns institutions, provisioning and articulated theory, and is least supported where it concerns sounding organisation in periods before notation.

36.3 Questions Contested Among Scholars

This section states the disputes bearing upon this Part. Its objective is to name them with their positions, in accordance with Chapter 5, and to record that this book adopts none. It proceeds by naming three.

The dating of an early treatise on music. A text transmitted as a chapter of a ritual compendium supplies the earliest sustained theoretical account of music in this trajectory. Its date is disputed: one position places its composition in the Warring States period; a second places it in the Western Han and associates it with a princely compilation; a third attributes it to a named early figure and faces the difficulty of anachronistic references within the text.¹

The relation of a preserved court repertory to its source. A repertory transmitted to the Japanese court from the continent is held within its own tradition to preserve the practice of its source.

¹Scott Cook, "Yue Ji: Record of Music. Introduction, Translation, Notes, and Commentary," *Asian Music* 26, no. 2 (1995): 1–96, argues for the earlier dating; the competing positions and the associated question whether a separate classic of music ever existed are surveyed there and in the literature it cites.

A research programme of the later twentieth century argued from surviving tablature that the transmitted performance had been progressively slowed, by a large factor, so that present performance bears little resemblance to the source practice.² The positions are incompatible and both are held on stated grounds.

The transmission of a temperament theory. A mathematical formulation of equal division of the octave was published in this trajectory in 1584 and a comparable formulation appeared in Europe within a generation. Three positions are held: that the first reached Europe and influenced the second; that the two were arrived at independently; and that the evidence for transmission is insufficient to support the first.³ Chapter 41 treats the question.

Requirement 36.3.1. (Standing of the three disputes). *The three disputes are stated with their positions and their proponents, this book adopts none of them, and any claim depending upon a particular position is marked as conditional upon it.*

36.4 The Geographical Scope and the Points of Transmission

This section states what the chapters cover. Its objective is to fix the scope and to identify where material beyond it enters.

The chapters treat the Chinese trajectory principally, for the reason that its documentation is continuous over the longest span and its institutions are the ones the administrative record documents.

Japanese and Korean material enters at the documented points of transmission. Chapter 39 treats the transmission of a court repertory and the divergence following it, which is the principal instance. Chapter 42 treats the reception of Western musical practice in both China and Japan, which supplies the contact design of Chapter 28 in its clearest form.

Claim 36.4.1. (Restriction of the scope and its cost). *The East Asian chapters treat the Chinese trajectory principally, with Japanese and Korean material entering at documented points of transmission, and the restriction leaves the internal trajectories of the latter two substantially untreated.*

The cost is recorded so that no claim of this Part is read as a claim about East Asian music generally.

36.5 The Sequence of the Seven Configurations

This section states what each chapter treats.

Chapter 37 treats the configuration in which large tuned bell sets were cast and deployed

²Laurence Picken et al., *Music from the Tang Court*, 7 vols. (Oxford and Cambridge: Oxford University Press and Cambridge University Press, 1981–2007). The retardation argument and the responses to it stand on the verification list.

³The positions and their proponents are surveyed in Alexander Rehding, “Fine-Tuning a Global History of Music Theory: Divergences, Zhu Zaiyu, and Music-Theoretical Instruments,” *Music Theory Spectrum* 44, no. 2 (2022): 260–275, DOI 10.1093/mts/mtac004.

in state ritual, and in which musical practice was administered as an instrument of rule.

Chapter 38 treats the configuration in which a state office collected regional song, and in which a foreign religious tradition arrived with its own liturgical sounding practice.

Chapter 39 treats the configuration in which a court maintained multiple repertoires of distinct origin simultaneously, and from which a repertoire was transmitted abroad.

Chapter 40 treats the configuration in which printing circulated tune repertoires and urban entertainment quarters supplied a paying audience.

Chapter 41 treats the configuration in which commercial theatre and regional diversification obtained, and in which the temperament theory of Section 3 was published.

Chapter 42 treats the configuration in which Western musical practice was received through state schooling in two jurisdictions.

Chapter 43 treats the configuration obtaining from the middle of the twentieth century, including the reformed ensembles and the designation of practices as heritage.

36.6 Summary of Results

This chapter has established the following. The divisions employed follow dynastic periods, which is supported by the state character of the musical institutions and by the organisation of the scholarship, and carries no claim that musical change coincided with administrative change. The East Asian material supplies archaeological, administrative and theoretical evidence of a completeness the Western material does not supply for comparable periods, and supplies recoverable melodic material for those periods less well, so that comparison between the trajectories is best supported where it concerns institutions, provisioning and articulated theory. Three questions bearing on this Part are contested and are stated with their positions and left open. The chapters treat the Chinese trajectory principally, with Japanese and Korean material entering at documented points of transmission, and the restriction is recorded as a cost.

Chapter 37

The Pre-Qin Configuration and the Administration of Sounding Order

This chapter treats the earliest of the seven East Asian configurations. Its role is to describe a configuration in which very large tuned instruments were cast at state expense, deployed in ritual whose scale was regulated by rank, and accompanied by an articulated theory relating musical order to political order. It undertakes to establish four things: that the archaeological record supplies, in one case, a theoretical apparatus inscribed upon the instruments themselves, so that a portion of the account is attested and not reconstructed; that the material demands of the instruments constitute an economic condition of an unusual severity; that the regulation of ensemble scale by rank is a documented instance of positional exclusion in the sense of Chapter 10; and that the articulated theory relating music to order is an articulated commitment whose operation must be assessed by the criterion of Chapter 4. It follows the template of Chapter 28.

37.1 The Configuration in Outline

This section identifies what the chapter treats.

The configuration obtained in the states of the Chinese Bronze Age through the Warring States period. The practices comprised are state and ancestral ritual, court entertainment, and the administration of musical establishments.

The documentation comprises excavated instruments and their inscriptions, transmitted texts, and later administrative and historical compilations. The evidentiary standing of each differs and is marked throughout.

The principal scholarship on the bell sets is that of Lothar von Falkenhausen.¹

37.2 Material and Technical Conditions

This section treats the material dimension. Its objective is to describe the instruments and to state what their production required.

¹Lothar von Falkenhausen, *Suspended Music: Chime-Bells in the Culture of Bronze Age China* (Berkeley: University of California Press, 1993).

The characteristic instruments are sets of tuned bronze bells suspended in graded series, together with sets of tuned stone chimes, and an inventory of further instruments classified by the material from which each is made.

The recovered set that supplies the most evidence comprises sixty-five bells and carries inscriptions amounting to some four thousand characters. The burial from which it was recovered is dated to the late fifth century before the common era on the evidence of an inscribed bell presented by a neighbouring ruler.²

Claim 37.2.1. (Attested standing of the inscribed theory). *The inscriptions upon the recovered bell set record pitch designations and the relations among the pitch systems of different states, and their content is attested by the objects themselves, so that this portion of the account requires no reconstruction.*

The claim marks an evidentiary situation without parallel elsewhere in this book. In every other case treated in Parts III and IV, the theoretical apparatus of a period is known from transmitted texts whose dates and transmission are themselves questions. Here the apparatus is inscribed upon the instruments.

Two matters remain reconstruction and are marked as such. How the instruments were played, and how the resulting sound was organised, are inferred from the instruments and from later practice. And the tuning of a set as recovered is affected by burial and recovery.

37.3 Economic Organisation

This section treats provisioning. Its objective is to establish that the instruments constitute an economic condition of unusual severity and to state what follows.

A graded set of tuned bronze bells requires the extraction and alloying of substantial quantities of metal, casting facilities of a scale supporting large objects, and the skilled labour to tune them after casting. The requirement is met by state or lordly provision and by no other arrangement.

Claim 37.3.1. (Material provision as an absolute exclusion). *A tuned bronze bell set is producible only where an authority commands metal, casting facilities and skilled labour at scale, so that the configurations it admits are excluded absolutely from fields lacking such an authority.*

The claim is the severest instance in this book of the exclusion fixed in Chapter 10. Elsewhere material conditions bound what is available; here a single class of instrument places an entire configuration beyond the reach of any party but a ruling authority.

A consequence follows for the argument of Part VII, and it is recorded here. Where a sounding configuration is producible only by a ruling authority, the configuration and the authority are not separable in the field, and any propagation claim concerning them requires care.

²Falkenhausen, *Suspended Music*. Figures for the number of bells and the extent of the inscriptions follow the published accounts and stand on the verification list.

37.4 Political and Institutional Conditions

This section treats regulation. Its objective is to describe the regulation of ensemble scale and to identify its form.

The normative literature of the period prescribes the scale of musical establishment proper to each rank of the political order, specifying the disposition of instruments and the number of performers admitted at each. The prescriptions are attested by the transmitted texts, and their observance is a separate question on which the texts themselves report disputes.

Claim 37.4.1. (Regulation of ensemble scale by political rank). *The normative literature prescribes the scale and disposition of musical establishment admitted to each rank of the political order, so that a configuration available to one party is excluded from another by a rule and not by any material or technical condition.*

The claim exhibits normative exclusion in the sense of Chapter 10, and it exhibits it with unusual clarity: the excluded configuration is materially available to the excluded party where that party commands the resources, and the exclusion is supplied by the rule alone.

That the texts report disputes over observance is itself evidence, and it is of the kind Chapter 11 treated: the divergence between the prescribed and the enacted is a finding about the configuration.

37.5 Social Structure and the Division of Musical Labour

This section treats positions.

Musical establishments were staffed by personnel attached to the court, and the transmitted administrative literature describes offices with defined responsibilities for the instruments, the performers and the occasions.

Performance of the bell sets requires several players striking a suspended series together, so that the instruments themselves require a coordinated body. The coordination problem of Chapter 6 accordingly arises in this configuration at the level of a single instrument.

37.6 The Cultural and Theoretical Field

This section treats the articulated accounts. Its objective is to state the theory relating musical to political order and to fix its evidentiary standing.

The transmitted literature of the period and shortly after articulates a relation between the ordering of sounds and the ordering of a polity, holding that the character of a state's music both reflects and bears upon the condition of its governance. The articulation is sustained and detailed, and it supplies the clearest instance in this book of a tradition asserting the connection this book examines.

The date of the principal text is disputed, and Chapter 36 stated the three positions and

left them open. The dispute bears upon whether the articulation belongs to the configuration described here or to a later one describing it.

A further element of the theoretical field is the classification of instruments by the material of their sounding bodies, into eight categories. The classification is the tradition's own and is reported as such, in accordance with the requirement of Chapter 9.

37.7 The Relational Architecture

This section supplies the chapter's principal content. Its objective is to describe the configuration in the terms of Part II and to apply the criterion of Chapter 4 to the articulated theory. It proceeds accordingly.

The sounding organisation comprises graded sets of tuned instruments of several materials, struck by a coordinated body of players, disposed spatially within a ritual setting, with the scale of the whole fixed by the rank of the party performing the rite.

Two features are notable in the terms of Part II. Timbral differentiation is built into the instrumentarium by the material classification, which supplies the resource identified in Chapter 9. And the pitch material is fixed in the metal: once cast and tuned, a bell sounds what it sounds, so that the pitch system of a set is a material fact about it.

Claim 37.7.1. (Fixation of a pitch system in material). *Where the pitch material of a practice is fixed by casting, the pitch system is a property of the instruments and is alterable only by recasting, so that a configuration's tuning becomes a matter of material provision.*

The claim identifies a condition with no parallel among the practices treated elsewhere in this book, and it bears upon the inscriptions of Section 2: a set recording the relations between its own pitch designations and those of other states records a solution to a coordination problem arising between polities with differently cast instruments.

The articulated theory of Section 6 requires assessment by the criterion of Chapter 4, and the assessment is stated carefully.

Claim 37.7.2. (External operation of the articulated correspondence). *The articulated relation between musical and political order operates externally within this configuration, in that the rank of a party determines the scale of establishment admitted to it, and the evidence assembled here supports no claim of internal operation upon the organisation of the sounding itself.*

The claim is the same in form as those returned throughout Part III. A tradition articulates a correspondence; the articulation governs who may sound what, at what scale and on what occasion; and whether it governs the internal organisation of the sound is a separate question the evidence does not settle.

37.8 The Problem Generated and What It Opened

This section states the succeeding problem.

The configuration ties a sounding organisation to instruments producible only by a ruling authority and fixed in their pitch material once cast. Two questions follow. What becomes of the practice where the authority provisioning it lapses. And how a practice so tied to fixed instruments accommodates material arriving from outside its pitch system.

Claim 37.8.1. (Generation of the accommodation problem). *A configuration whose pitch material is fixed in cast instruments and whose provision depends upon a ruling authority generates the question of how material of foreign origin and different tuning is accommodated, and the question of what persists where the provisioning authority lapses.*

Chapter 38 treats the configuration in which both questions were answered.

37.9 Summary of Results

This chapter has established the following. The inscriptions upon a recovered bell set record pitch designations and cross-state relations, and their content is attested by the objects, which is an evidentiary situation without parallel elsewhere in this book; how the instruments were played remains reconstruction. A tuned bronze bell set is producible only where an authority commands metal, facilities and skilled labour at scale, which is the severest instance of material exclusion treated here. The normative literature regulates the scale of musical establishment by political rank, which exhibits normative exclusion with unusual clarity, and the texts' own reports of disputes over observance are evidence of divergence between the prescribed and the enacted. Pitch material fixed by casting makes a configuration's tuning a matter of material provision, and the cross-state relations inscribed on the set record a solution to a coordination problem between polities with differently cast instruments. The articulated relation between musical and political order operates externally, governing the scale of establishment admitted to each rank, and the evidence supports no claim of internal operation.

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Chapter 38

Collection, Arrival, and the First Documented Contact of Sounding Traditions

This chapter treats the second of the seven East Asian configurations. Its role is to describe a configuration in which a state office collected sounding material from outside the court, and in which a religious tradition of foreign origin arrived with its own liturgical practice, so that the contact design of Chapter 28 becomes available for the first time in this trajectory. It undertakes to establish three things: that administrative collection of regional material constitutes a documented channel by which material crossed between fields of differing constitution; that the arrival of a foreign liturgical tradition supplies a contact whose reception is documented on the receiving side; and that the accommodation of a text of foreign origin to a tonal language poses a problem whose solutions bear directly upon the mechanism identified in Chapter 14. It follows the template of Chapter 28.

38.1 The Configuration in Outline

This section identifies what the chapter treats.

The configuration obtained across the Han period and the centuries of division following it. The practices comprised are state and court music, the collection and administration of song, monastic liturgical practice, and the music of literati and of entertainers.

The documentation comprises transmitted histories and administrative compilations, collected song texts, philosophical and critical writing on music, and, for the monastic material, the textual record treated in Chapter 15.¹ Sound is unavailable throughout, and every claim about sounding organisation in this chapter is reconstruction or inference in the sense of Chapter 13.

38.2 Material and Technical Conditions

This section treats the material dimension.

¹The standard English reference for this trajectory as a whole is Robert C. Provine, Yoshihiko Tokumaru and J. Lawrence Witzleben, eds., *The Garland Encyclopedia of World Music, Volume 7: East Asia: China, Japan, and Korea* (New York: Routledge, 2002); a short survey is Frederick Lau, *Music in China: Experiencing Music, Expressing Culture* (New York: Oxford University Press, 2008).

Instruments of foreign origin entered the trajectory across this period along the routes of trade and of embassy, and their entry is documented in the transmitted record and in iconography. The consequence bears upon the question generated in Chapter 37: a configuration whose pitch material was fixed in cast instruments received instruments whose pitch material was fixed otherwise.

Notation adequate to recover melodic material is scarce for this period, and what survives requires reconstruction whose results are contested.

38.3 Economic and Administrative Organisation

This section treats provisioning and the collection office. Its objective is to describe the office and to state what its operation constitutes for the argument.

A state office was charged with the collection of song from the regions, and the transmitted record describes its establishment, its personnel and the material it assembled. The collected texts survive; their sounding realisations do not.

Claim 38.3.1. (Administrative collection as a documented channel of transfer). *The operation of a state collection office constitutes a documented channel by which sounding material passed from regional fields into a court field, and the channel is administrative and deliberate.*

The claim identifies an instance of the transmission mechanism of Chapter 25 operating through an institution and recorded by that institution. Elsewhere in this book transmission is inferred from resemblance or from the traditions' own accounts; here the transfer is administratively documented.

A limit is recorded at once. What the office collected is attested in text; what was done with it musically at court is not, and the relation between the collected material and the court's sounding organisation is inference.

Monastic institutions established their own economic arrangements in this period, and their provisioning supported the liturgical practice treated in Section 7.

38.4 Political Conditions

This section treats regulation and policy.

Collection of regional song is described in the transmitted record as bearing upon governance, on the account that the songs of a region inform an administration of that region's condition. The account is the tradition's own and is reported as such.

Patronage of musical practice of foreign origin was contested at court in this period, and the transmitted record preserves the contest. The material is reported as evidence of the contest and not as establishing any position within it.

38.5 Social Structure and the Division of Musical Labour

This section treats positions.

Musical labour divided among court establishments, entertainers, monastic personnel and literati amateurs. The last is a position with no counterpart in the Western configurations of this Part: a party of standing who performs without payment and whose practice is treated as an accomplishment of cultivation.

Monastic personnel constitute a further position, and Chapter 15 treated the division of ritual labour within it. Its relevance here is that a class of specialist entered the field whose musical practice was maintained by an institution independent of the court.

Claim 38.5.1. (Entry of an institutionally independent musical specialist). *The establishment of monastic institutions introduced a class of musical specialist provisioned independently of the court, so that the field came to contain practices whose maintenance did not depend upon a ruling authority.*

The claim bears upon the question generated in Chapter 37 concerning what persists where the provisioning authority lapses, and it supplies part of the answer.

38.6 The Cultural and Theoretical Field

This section treats the articulated accounts.

Critical and philosophical writing on music continued in this period, and one strand addressed the question whether music carries determinate affective content or whether the content is supplied by the hearer. The dispute is reported here as a dispute internal to the period's literature.

The relevance to this book is that the dispute concerns the same question Chapter 49 addressed under the heading of symbolic weight, and that it was conducted within this trajectory on independent grounds. The coincidence is recorded and no inference is drawn from it.

38.7 The Relational Architecture and the Accommodation of a Foreign Liturgy

This section supplies the chapter's principal content. Its objective is to describe the contact and the problem it posed, and to identify what the solutions bear upon. It proceeds by stating the contact, the problem, and its connection to Chapter 14.

A religious tradition of foreign origin arrived in this trajectory across this period, carrying a liturgical practice in which texts are delivered in a sounding manner. The texts were translated; the sounding practice had to be re-established in a receiving setting.

The problem posed is stated precisely, since it is the chapter's contribution. The receiving language is tonal, in that lexical distinctions are carried by pitch contour on syllables. A sounding delivery assigns pitch contours to syllables. Where the two conflict, either the

delivery obscures the lexical distinctions or the melodic material is constrained by them.

Claim 38.7.1. (Constraint upon delivery by lexical tone). *Where a liturgical text is delivered in a language carrying lexical distinctions by pitch contour, the melodic material of the delivery and the lexical intelligibility of the text impose competing requirements, and a practice adopting one constrains the other.*

The claim connects this configuration directly to the mechanism identified in Chapter 14 as the second of three candidates: constraint of melodic realisation by the tonal properties of the local speech. Chapter 14 recorded that the mechanism is established in the linguistic literature, that its strength varies by language, and that its application to any particular liturgical repertory requires demonstration.

The present chapter adds a historical observation and withholds the demonstration. The arrival documented here is the moment at which the problem first arose in this trajectory for a body of text of foreign origin, and the solutions adopted are the subject of the tradition's own subsequent literature. What those solutions were, and whether they constrained melodic material in the manner the claim describes, is a question the surviving evidence does not settle, since sounding realisations of this period are unavailable.

Requirement 38.7.2. (Standing of the accommodation account). *The account of the accommodation of a foreign liturgy to a tonal receiving language states the problem posed and does not state its solution, since the sounding realisations of the period are unavailable.*

38.8 The Problem Generated and What It Opened

This section states the succeeding problem.

The configuration established that a court field could contain, simultaneously, material of court origin, material collected from the regions, material arriving from outside the trajectory, and material maintained by institutions independent of the court.

Claim 38.8.1. (Generation of the simultaneity problem). *A field containing repertories of distinct origin, maintained by distinct institutions, generates the question of how those repertories stand to one another within a single occasion and a single establishment.*

Chapter 39 treats the configuration in which the question received an administrative answer.

38.9 Summary of Results

This chapter has established the following. The operation of a state collection office constitutes a documented and deliberate administrative channel by which sounding material passed from regional fields into a court field, though what was done with the collected material musically at court is inference. The establishment of monastic institutions introduced a class

of musical specialist provisioned independently of the court, which supplies part of the answer to the question generated in Chapter 37. The arrival of a foreign liturgical tradition in a tonal-language setting poses competing requirements between melodic material and lexical intelligibility, which connects this configuration to the second selection mechanism identified in Chapter 14; the problem is stated here and its solution is not, since sounding realisations of the period are unavailable. The configuration generates the question of how repertoires of distinct origin stand to one another within a single establishment.

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Chapter 39

Administered Simultaneity of Repertories and the Transmission of a Court Practice

This chapter treats the third of the seven East Asian configurations. Its role is to describe a configuration in which a court maintained several repertories of distinct origin simultaneously, classified them administratively by their provenance, and transmitted one of them abroad. It undertakes to establish four things: that the administrative classification of court repertories by origin constitutes an answer to the simultaneity problem generated in Chapter 38, and an answer of a distinctive kind; that the establishments training and maintaining performers were organised at a scale supplying the conditions Chapter 32 identified for the Western trajectory a millennium later; that the transmission of a repertory abroad supplies the contact design of Chapter 28; and that the scholarly dispute over how far the transmitted repertory preserves its source is presented and left open. It follows the template of Chapter 28.

39.1 The Configuration in Outline

This section identifies what the chapter treats.

The configuration obtained across the Sui and Tang periods. The practices comprised are court ceremonial and entertainment music, the establishments training and maintaining performers, monastic practice, and the music of entertainment quarters.

The documentation comprises transmitted histories and administrative compilations, instruments and objects preserved in a repository of the eighth century, iconography, tablature notations whose interpretation is contested, and the record of the receiving traditions abroad.

39.2 Material and Technical Conditions

This section treats the material dimension.

The instrumentarium of this configuration is cosmopolitan. Instruments of Central and West Asian origin were in court use alongside instruments of longer standing in the trajectory, and their presence is attested by transmitted description, by iconography and by surviving objects.

The consequence for the question generated in Chapter 37 is direct. A configuration whose earlier pitch material had been fixed by casting received instruments of variable and adjustable tuning, and the accommodation is a material fact about the ensemble, with doctrine playing no part in it.

Notation of this period survives in tablature forms, and the recovery of melodic material from them is the subject of the dispute treated in Section 9.

39.3 Economic Organisation

This section treats provisioning.

Court establishments maintained performers at a scale the transmitted record describes in administrative terms, with personnel numbered and provisioned. Entertainment quarters supplied paid performance outside the court. Monastic institutions continued the arrangement described in Chapter 38.

Claim 39.3.1. (Scale of establishment as a condition on repertory). *Maintenance of several repertories of distinct origin simultaneously requires an establishment large enough to retain specialists in each, so that the configuration is excluded from fields unable to provision specialists who perform on a portion of occasions only.*

The claim is an instance of the economic exclusion fixed in Chapter 10, and it is worth stating because the exclusion here concerns not the size of a single ensemble but the number of distinct competences retained.

39.4 Political and Institutional Conditions

This section treats regulation and establishment. Its objective is to describe the administrative classification of repertories and to state what kind of answer it constitutes.

The court classified its music administratively. The transmitted record describes a system in which repertories were enumerated as distinct categories identified by their place of origin, and performed as such on court occasions. A separate distinction divided ceremonial music proper, common music, and music of foreign provenance.

Claim 39.4.1. (Classification of repertories by provenance). *The administrative organisation of court music in this configuration classified repertories by their place of origin and maintained them as distinct categories, so that heterogeneity of provenance was preserved by the classification and not resolved by assimilation.*

The claim identifies the answer this configuration gave to the problem generated in Chapter 38, and the answer is distinctive. A field containing repertories of distinct origin might resolve the heterogeneity by assimilating them to a common practice. This configuration resolved it administratively, by retaining the distinctions and assigning each repertory a place

within a classification and an occasion.

The connection to the argument of this book is stated. Chapter 1 asked under what conditions a relational process sustains the differentiation it generates. Here differentiation among repertoires is sustained by an administrative act, and the sustaining is external to the sounding organisation: the categories are maintained by the establishment, and the repertoires remain distinct because they are kept distinct.

Claim 39.4.2. (Administrative sustaining of differentiation). *Differentiation among repertoires within this configuration is sustained by an administrative classification maintained by the establishment, so that the sustaining is a property of the institution and not of the sounding organisation.*

Establishments for the training and maintenance of performers were founded in this configuration, and the transmitted record names them and describes their functions. Their significance for this book is that they supply what Chapter 32 identified in the Western trajectory as a condition on ensemble assembly: parties trained to a common standard, in numbers, retained by an institution.

39.5 Social Structure and the Division of Musical Labour

This section treats positions.

Performers were retained by the court establishments, and the transmitted record describes their status, their numbers and their obligations. Performers of foreign origin were present at court and their presence is documented.

The status of performers in this configuration is a matter the transmitted record addresses, and it differs from the status of the literati amateurs described in Chapter 38. The two positions coexisted, and the coexistence is a feature of the trajectory that Chapter 29's configurations do not exhibit in the same form.

39.6 The Cultural and Theoretical Field

This section treats the articulated accounts.

Theoretical writing of the period treats modal organisation, and the transmitted theoretical vocabulary of modes is extensive. Its relation to the practice it describes is a question the tablature dispute of Section 9 bears upon.

Poetry and song stood in close relation in this configuration, with poetic forms composed for singing and song texts entering the poetic corpus. The relation supplies the antecedent of the tune-title system treated in Chapter 40.

39.7 The Relational Architecture

This section describes the configuration in the terms of Part II.

The court ensemble comprises instruments of several origins, sounding together on ceremonial occasions and separately in the categorised repertories. Textural organisation in the ensembles of this configuration is reconstructed from tablature and from later practice, and the reconstruction is contested.

Two features may be stated with more confidence, since they rest on administrative and not on notational evidence.

The differentiation of repertories is maintained externally, as Section 4 established. And the large forms of the period are extended in duration and composite in structure, comprising sections of differing character performed in sequence, which the transmitted descriptions record.

Claim 39.7.1. (Composite extension as an organisation of long spans). *The large forms of this configuration organise extended spans by the sequence of sections differing in character and tempo, which is an organisation of long duration by succession of differentiated parts.*

The claim is placed against Chapter 8 deliberately. That chapter treated long-range organisation as a function a coordinating pitch centre may perform. Here long spans are organised by sectional succession, which is a different solution to the same requirement, and the prohibition of Chapter 5 forbids ranking them.

39.8 The Transmission Abroad and the Contact It Supplies

This section treats the transmission. Its objective is to identify what was transmitted, to whom, and what the case supplies to the argument.

A body of court repertory, together with its instruments and its performance practice, was transmitted to the courts of neighbouring polities in this period, and the receiving traditions maintained it thereafter. The transmission is documented on both sides.

Claim 39.8.1. (Availability of a documented transmission with a maintained receiving tradition). *The transmission of a court repertory to a receiving court, where it was maintained as a distinct practice thereafter, supplies a case in which the transmitted material, the date of transmission and the subsequent maintenance are all documented.*

The claim identifies what makes the case valuable. Chapter 25 recorded that lineage transmission is the mechanism least independently tested in this book, being attested chiefly by traditions' accounts of themselves. Here the transmission is attested on both sides and its date is fixed.

What the case does not settle is treated in Section 9.

39.9 The Dispute Over Preservation and Its Standing

This section presents a scholarly dispute, in accordance with Chapter 5. Its objective is to state the positions with their grounds and to record that this book adopts neither.

The first position holds that the receiving tradition preserves the practice of its source, and it is the position maintained within that tradition and supported in the scholarship associated with it.

The second position holds that the transmitted performance was progressively slowed across the centuries of its maintenance, by a factor large enough that present performance stands in little melodic relation to the source practice. The position was argued from the surviving tablature notations by a research programme of the later twentieth century.¹

Requirement 39.9.1. (Standing of the preservation dispute). *The positions on the preservation of the transmitted repertory are stated with their grounds, this book adopts neither, and no claim in this book depends upon either.*

The dispute is recorded because of what it costs the argument. Were the first position established, the case would supply a documented instance of melodic material maintained across a millennium, against which the mechanisms of Chapter 25 could be assessed. Were the second established, the case would supply a documented instance of substantial drift under institutional maintenance, which would bear on the same mechanisms in the opposite direction. Since the dispute is open, the case supplies neither. What it does supply is the observation that a documented transmission with an unbroken institutional history leaves open what was preserved.

Claim 39.9.2. (Insufficiency of documented transmission for a claim of preservation). *A transmission whose date, material and subsequent institutional maintenance are all documented does not thereby establish what of the transmitted practice persisted, since the question of persistence requires evidence about sound that institutional documentation does not supply.*

The claim generalises beyond this case and is carried to Chapter 44.

39.10 The Problem Generated and What It Opened

This section states the succeeding problem.

The configuration maintained repertories by administrative classification and established institutions retaining specialists in each. The arrangement depends upon the establishment. Where the establishment contracts, the classification loses its bearer, and the repertories it kept distinct are maintained by whatever institutions remain.

Claim 39.10.1. (Generation of the dispersal problem). *A configuration in which differentiation*

¹Laurence Picken et al., *Music from the Tang Court*, 7 vols. (Oxford and Cambridge: Oxford University Press and Cambridge University Press, 1981–2007). The magnitude claimed for the retardation, and the responses of scholars who accept the general position while disputing details, stand on the verification list.

among repertories is sustained administratively generates the question of what becomes of the repertories where the administering establishment contracts.

Chapter 40 treats the configuration in which musical practice was provisioned substantially outside the court.

39.11 Summary of Results

This chapter has established the following. Maintenance of several repertories of distinct origin requires an establishment able to retain specialists in each, which is an economic exclusion concerning the number of competences retained. The administrative classification of repertories by provenance preserved heterogeneity by retaining the distinctions, with no assimilation attempted, so that differentiation was sustained by the institution and not by the sounding organisation. Long spans in this configuration were organised by sectional succession, a solution distinct from organisation by a coordinating pitch centre and not ranked against it. The transmission of a court repertory abroad supplies a case whose material, date and subsequent institutional maintenance are documented; the dispute over how far the receiving tradition preserves its source is presented and left open, with the consequence that a documented transmission does not by itself establish what persisted.

Chapter 40

Urban Provisioning, Circulated Tunes, and the Inversion of the Fixed Layer

This chapter treats the fourth of the seven East Asian configurations. Its role is to describe a configuration in which musical practice was provisioned substantially by paying urban audiences, in which printing circulated repertoires, and in which a compositional practice arose whose fixed and variable layers stand in the reverse relation to those of every case treated so far. It undertakes to establish four things: that urban commercial provisioning answered the dispersal problem generated in Chapter 39; that printing altered the reproductive dimension in a manner comparable to its effect in the Western trajectory, at an earlier date; that the tune-title practice inverts the fixed-layer arrangement assembled in Chapter 26 and thereby supplies a test of what that arrangement's generality rests upon; and that literati instrumental practice supplies a further notational arrangement distinct from both. It follows the template of Chapter 28.

40.1 The Configuration in Outline

This section identifies what the chapter treats.

The configuration obtained across the Song and Yuan periods. The practices comprised are court ritual music, urban commercial entertainment, theatrical performance, literati instrumental practice, and monastic practice.

The documentation comprises transmitted histories, printed and manuscript collections of song texts with their tune designations, notated collections for a plucked instrument of literati practice, descriptive accounts of urban entertainment, and theatrical texts.

A limit on the documentation is recorded at the outset. The descriptive accounts of urban entertainment quarters are the principal evidence for the arrangements of Section 3, and the standard documentary treatment in English belongs to theatre history.¹

¹Wilt L. Idema and Stephen H. West, *Chinese Theater, 1100–1450: A Source Book* (Wiesbaden: Franz Steiner Verlag, 1982), which assembles the documentary record of the urban entertainment quarters, resting substantially on Meng Yuanlao's twelfth-century account of the former capital. No dedicated survey of the sounding practice of those quarters is known to the present author, and the absence is recorded as a gap in the literature and not merely in this chapter.

40.2 Material and Technical Conditions

This section treats the material dimension.

Printing developed in this configuration to a degree admitting the circulation of texts in quantity, and among the texts circulated were song collections with their tune designations and theatrical texts.

Claim 40.2.1. (Alteration of the reproductive dimension by printing). *Circulation of song collections in print admits the transmission of a repertory to parties the transmitting institution does not train, which is an alteration along the reproductive dimension fixed in Chapter 27.*

The claim is stated in the same terms as the corresponding claim about the Western trajectory in Chapter 30, and the comparison is instructive: the same alteration occurred in this trajectory earlier, and Chapter 44 returns to what followed from it in each.

Instruments of literati practice and of theatrical practice are documented, and the former is treated in Section 7 for its notational arrangement.

40.3 Economic Organisation

This section treats provisioning. Its objective is to identify the arrangement distinguishing this configuration and to state what it admitted.

Urban entertainment quarters supplied venues at which performance was given to paying audiences, and troupes were maintained by the income from it. Court establishments continued alongside, on a scale the transmitted record describes.

Claim 40.3.1. (Urban commercial provisioning as an answer to dispersal). *Provisioning by paying urban audiences maintains musical practice independently of a court establishment, and thereby admits the persistence of repertories where the administering establishment contracts.*

The claim answers the question generated in Chapter 39, and it exhibits a form recurring across both trajectories of this Part. In Chapter 30 paying audiences admitted configurations that patronage had excluded; here they admit the persistence of configurations that a contracting establishment would otherwise have ended. The economic constituent operates in both cases, and its operation differs.

40.4 Political and Institutional Conditions

This section treats regulation.

Court ritual music continued under administrative maintenance, and the transmitted record documents debates over its reform.

Commercial performance was subject to regulation as to venues, occasions and content, and the arrangements varied across the period and across administrations.

40.5 Social Structure and the Division of Musical Labour

This section treats positions.

Troupes constituted a professional body maintained by performance income, with membership, training and itinerancy organised within them.

Literati amateurs continued the position described in Chapter 38, and their instrumental practice is documented by their own notated collections and by their writing about it.

The status of professional performers in this configuration is documented and differed from that of literati practitioners of the same instruments. The divergence is recorded as a feature of the field.

40.6 The Cultural and Theoretical Field

This section treats the articulated accounts.

Writing of the period treats the aesthetics of instrumental practice, the criteria of good performance, and the relation between a player's cultivation and the sound produced. The literature is extensive and belongs to the literati position.

Theatrical practice generated its own critical and technical literature across this and the following configuration.

40.7 The Relational Architecture

This section supplies the chapter's principal content. Its objective is to describe two notational arrangements and to establish that the first inverts the arrangement assembled in Chapter 26. It proceeds accordingly.

The first arrangement is the tune-title practice. A body of tunes, identified by name, circulated within the practice; a writer composed a new text to the metrical and tonal requirements of a named tune; and the resulting item was performed to that tune. The fixed layer is accordingly the tune, and the variable layer is the text.

Claim 40.7.1. (Inversion of the fixed and variable layers). *In the tune-title practice the melodic material is the fixed and transmitted layer and the verbal text is composed afresh to fit it, which reverses the arrangement of the three cases assembled in Chapter 26 and of the continuo practice described in Chapter 30.*

The claim is the chapter's principal contribution and its significance requires statement. Chapter 26 assembled three cases in which a fixed verbal text received divergent melodic realisations, and drew from them the negative result that realisation is underdetermined by text and prescription. The result depended upon the text being the fixed layer.

The present case establishes that the assignment of fixity is not a property of the relation between text and melody. Either may be fixed and either may vary, and which is which is a

property of the practice.

Claim 40.7.2. (Practice-relative assignment of fixity). *Which of a verbal and a melodic layer is transmitted as fixed and which is composed or realised afresh is a property of the practice, so that the arrangement examined in Chapter 26 is one of two available and its prevalence in liturgical settings requires explanation from the setting.*

The claim strengthens Part III's finding in one respect and qualifies it in another. It strengthens it because a practice in which the melody is fixed shows that the liturgical traditions' fixing of the text is a choice their settings impose, which is what those traditions themselves assert: the text is fixed because of what the text is. It qualifies it because a comparative claim drawn from liturgical cases alone would have generalised a feature of liturgy.

A condition of the tune-title practice bears on Chapter 38 and is recorded. Composing a text to a fixed tune in a tonal language requires that the text's tonal contour accommodate the tune, which is the constraint identified there operating in the reverse direction: there melody accommodated text, here text accommodates melody.

The second arrangement is the notation of literati instrumental practice. Its notation specifies the actions of the player upon the instrument, the string, the position and the manner of stopping and plucking, and does not specify duration in a form recoverable without instruction.

Claim 40.7.3. (Specification of action as the object of notation). *A notation specifying the player's actions upon an instrument fixes what is done and leaves what sounds to follow from it, which distinguishes it from notations specifying pitch, figure or contour.*

The claim adds a fourth type to the notational arrangements collected across this book: figures specifying relations above a bass (Chapter 30), signs specifying melodic figures attached to a syntactic division (Chapter 21), graphs specifying melodic shape held insufficient without instruction (Chapter 16), and now tablature specifying action.

40.8 The Problem Generated and What It Opened

This section states the succeeding problem.

The configuration provisions practice commercially, circulates repertory in print, and maintains a tune stock that texts are composed to fit. The arrangement supports elaboration of theatrical forms, and elaboration raises the question of how a large theatrical repertory is organised, transmitted and standardised across troupes and regions.

Claim 40.8.1. (Generation of the standardisation problem). *A configuration in which theatrical performance is provisioned commercially and transmitted across troupes and regions generates the question of what fixes a practice where no single establishment administers it.*

Chapter 41 treats the configuration in which the question received several answers at once.

40.9 Summary of Results

This chapter has established the following. Provisioning by paying urban audiences maintains musical practice independently of a court establishment and admits the persistence of repertoires where an administering establishment contracts. Printing alters the reproductive dimension by admitting transmission to parties the transmitting institution does not train, and the alteration occurred in this trajectory earlier than in the Western one. The tune-title practice inverts the fixed and variable layers of the cases assembled in Chapter 26, which establishes that the assignment of fixity is a property of the practice and that the liturgical arrangement is one of two available; composing a text to a fixed tune in a tonal language runs the constraint of Chapter 38 in the reverse direction. Tablature specifying a player's actions fixes what is done and leaves what sounds to follow, adding a fourth type to the notational arrangements collected in this book.

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Chapter 41

Commercial Theatre, Regional Divergence, and the Mathematical Division of the Octave

This chapter treats the fifth of the seven East Asian configurations. Its role is to describe a configuration in which theatrical practice diversified regionally under commercial provisioning, and in which a mathematical solution to a tuning problem was published whose relation to a comparable European solution is disputed. It undertakes to establish four things: that regional divergence under commercial provisioning supplies a case of the divergence-under-shared-inheritance form established in Part III, from a secular setting; that the theatrical practices of this configuration exhibit the tune-stock arrangement of Chapter 40 at a larger scale; that the temperament question is presented with its three positions and left open; and that equal division of the octave answers a coordination problem of the kind Chapter 37 identified. It follows the template of Chapter 28.

41.1 The Configuration in Outline

This section identifies what the chapter treats.

The configuration obtained across the Ming and Qing periods. The practices comprised are court ritual music, commercial and household theatrical performance, regional theatrical traditions, literati instrumental practice, and the ritual traditions treated in Chapter 14.

The documentation comprises transmitted histories, theoretical treatises, theatrical texts and their commentaries, troupe and household records, and the notated and descriptive material of the several theatrical traditions.

41.2 Material and Technical Conditions

This section treats the material dimension, and the theoretical work of Section 6 is treated separately there.

Instruments of theatrical practice are documented and differ among the regional traditions, and the differences bear upon the divergence treated in Section 7.

Theatrical venues developed across the period, in commercial premises and in the house-

holds of wealthy patrons, and the two settings supplied different acoustic and spatial conditions.

41.3 Economic Organisation

This section treats provisioning.

Three arrangements coexisted. Commercial theatre supplied income from paying audiences. Household troupes were maintained by wealthy patrons, and their maintenance is documented in the records of the households concerned. Court establishments continued.

Claim 41.3.1. (Coexisting arrangements as a condition on divergence). *Where theatrical practice is provisioned by commercial performance, by household maintenance and by court establishment simultaneously, the practices maintained under each are subject to different requirements, so that the field admits divergence among them without any party determining it.*

The claim identifies the economic condition bearing upon Section 7, and it is an instance of the general form of Chapter 27: conditions admit and do not select.

41.4 Political and Institutional Conditions

This section treats regulation.

Theatrical performance was regulated as to venues, occasions and content across the period, and the regulations varied. Court adoption of regional theatrical forms is documented at points across the period, and constitutes a channel by which a regional practice acquired a further institutional bearer.

41.5 Social Structure and the Division of Musical Labour

This section treats positions.

Troupes were organised with membership, training and internal division of roles, and their organisation is documented.

The social standing of professional performers in this configuration is documented and was low, with legal and social disabilities attaching to the occupation in ways the record describes. The disabilities bear upon the argument in one respect and are recorded for it: a practice whose specialists hold a disfavoured position is transmitted within a body whose membership is constrained by that position, which is a condition upon the transmission mechanism of Chapter 25.

Literati practice continued alongside, and the divergence in standing between the two positions persisted.

41.6 The Cultural and Theoretical Field

This section treats the articulated accounts, including the theoretical work bearing on tuning. Its objective is to state that work, to present the dispute concerning it, and to identify the problem it solves.

A body of aesthetic writing attached to the more literati-associated theatrical tradition, treating criteria of singing, of text and of performance.

The theoretical work bearing on tuning is the following. A mathematical formulation dividing the octave into twelve equal parts was published in this trajectory in 1584 and was incorporated in a larger compilation in 1606.¹

The dispute concerns whether this formulation reached Europe, where a comparable formulation appeared within a generation. Three positions are held. The first holds that the formulation was carried west and influenced the European one. The second holds that the two were arrived at independently, and notes that no documented contact between the author and European visitors has been established. The third holds that the evidence advanced for transmission is insufficient to support it.²

Requirement 41.6.1. (Standing of the temperament dispute). *The three positions on the transmission of the temperament formulation are stated with their proponents, this book adopts none of them, and no claim in this book depends upon any of them.*

The problem the formulation solves is identified, since it connects to Chapter 37. Where a set of pitches is generated by successive application of a fixed interval ratio, the series does not close upon its starting pitch, and a practice transposing material to different starting pitches encounters discrepancies. Equal division of the octave removes the discrepancy by making the intervals uniform.

Claim 41.6.2. (Equal division as a solution to a transposition problem). *Division of the octave into equal parts admits the transposition of material to any starting pitch without alteration of the intervals, and thereby answers a coordination problem arising wherever fixed-pitch instruments are required to sound material at differing pitch levels.*

The claim connects the theoretical work to the material condition identified in Chapter 37, where pitch fixed by casting made tuning a matter of material provision and cross-state relations required inscription. The problem is of one kind: instruments whose pitches are fixed must nevertheless be brought into relation with one another and with material of differing pitch level.

A limit is recorded. That a formulation solves a problem establishes nothing about whether it was adopted in practice, and the adoption of equal division in performing practice within

¹The formulation appears in Zhu Zaiyu's 《律學新說》 (*Lǜxue xīnshuo*, 1584) and was subsequently incorporated in his collected 《樂律全書》 (*Yuelü quanshu*, presented 1606).

²The positions and their proponents are surveyed in Alexander Rehding, "Fine-Tuning a Global History of Music Theory: Divergences, Zhu Zaiyu, and Music-Theoretical Instruments," *Music Theory Spectrum* 44, no. 2 (2022): 260–275, DOI 10.1093/mts/mtac004.

this trajectory is a separate question from its formulation.

41.7 The Relational Architecture and Regional Divergence

This section supplies the chapter's principal content. Its objective is to describe the divergence of theatrical traditions and to state what form of result it supplies.

The theatrical traditions of this configuration diverge regionally. They differ in the instruments accompanying the voice, in the vocal manner, in the tune stock employed and in the relation between the sung and spoken portions. The divergence is documented and its outlines are established.

Two features of the divergence bear on the argument.

The traditions share a substantial inheritance: theatrical forms, story material, conventions of role type, and the tune-stock arrangement described in Chapter 40. And they diverge in sounding organisation.

Claim 41.7.1. (Divergence under shared inheritance in a secular setting). *Theatrical traditions sharing forms, story material, role conventions and the tune-stock arrangement diverge in their sounding organisation across regions, which exhibits in a secular and commercially provisioned setting the form of result established in Chapters 14 and 17 for ritual traditions.*

The claim extends Part III's principal finding beyond ritual. Chapter 26 recorded that its three controlled comparisons were all liturgical, and recorded the consequent risk of generalising a feature of liturgy. The present case supplies a setting in which no fixed sacred text obtains, no doctrinal commitment governs, and provisioning is commercial, and in which sounding organisation nevertheless diverges across communities sharing an inheritance.

What the case does not supply is a controlled comparison in the sense of Chapter 26, since the shared inheritance here is not a fixed item held constant but a body of conventions differing in detail among the traditions. The case supports the general form of the result and does not tighten it.

Two further features are recorded. Speech tone bears upon vocal delivery in these traditions, and the regional traditions employ regional speech, which supplies a candidate mechanism for a portion of the divergence and is the mechanism identified in Chapter 14. And a tradition formed in the capital across the later part of the period from troupes arriving from a province, which supplies a documented instance of a tradition assembled from arriving material.

41.8 The Problem Generated and What It Opened

This section states the succeeding problem.

The configuration maintained regional divergence under commercial provisioning, with no single establishment administering the field. The arrangement raises the question of what

obtains when an administration undertakes to organise the field as a whole.

Claim 41.8.1. (Generation of the reorganisation problem). *A field in which divergent traditions are maintained by commercial provisioning generates the question of what follows where a state undertakes to standardise, to school and to classify musical practice across the field.*

Chapter 42 treats the configuration in which that undertaking was made, in two jurisdictions, and in which the material undertaken with was of foreign origin.

41.9 Summary of Results

This chapter has established the following. Simultaneous provisioning by commercial performance, household maintenance and court establishment subjects practices to different requirements and admits divergence among them without any party determining it. Regional theatrical traditions sharing forms, story material, role conventions and the tune-stock arrangement diverge in sounding organisation, which extends Part III's principal finding to a secular and commercially provisioned setting where no fixed sacred text and no doctrinal commitment obtain; the case supports the general form of the result and supplies no controlled comparison. The mathematical division of the octave into equal parts published in this configuration answers a transposition problem of the kind identified in Chapter 37, and the dispute over whether the formulation reached Europe is presented with its three positions and left open, with no claim in this book depending upon it.

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Chapter 42

State Schooling, Notational Adoption, and a Common Arrival at Two Receiving Configurations

This chapter treats the sixth of the seven East Asian configurations, and it supplies the contact design of Chapter 28 in its clearest form. Its role is to describe the reception of Western musical practice in two jurisdictions of this trajectory, and to state what the divergence between the receptions may and may not be attributed to. It undertakes to establish four things: that state schooling constitutes a channel of transmission with no precedent in either trajectory, since it reaches parties who will not become practitioners; that the adoption of a notation and a tuning bears upon existing repertoires in ways the record documents; that the two receptions diverged in identifiable respects; and that the attribution of the divergence is limited by the conditions Chapter 28 fixed. It follows the template of Chapter 28.

42.1 The Configuration in Outline

This section identifies what the chapter treats.

The configuration obtained across the later nineteenth century and the earlier twentieth in two jurisdictions of this trajectory. The practices comprised are state schooling in music, military and ceremonial band performance, conservatory training, the composition and publication of new repertoires, and the continuing traditions treated in the preceding chapters and in Part III.

The documentation is administrative and dense: the founding instruments of institutions, curricula, published song collections, conservatory records, and the writings of the parties undertaking the reforms.¹

42.2 Material and Technical Conditions

This section treats the material dimension. Its objective is to identify three alterations and to state what each bears upon.

¹On the Chinese school-song repertory the standard study is Qian Renkang, 《學堂樂歌考源》 (Shanghai: Shanghai Music Publishing House, 2001); on the Japanese reception, Ury Eppstein, *The Beginnings of Western Music in Meiji Era Japan* (Lewiston, NY: Edwin Mellen Press, 1994). For the Japanese trajectory generally, Eta Harich-Schneider, *A History of Japanese Music* (London: Oxford University Press, 1973).

Instruments of Western construction were imported and subsequently manufactured within the trajectory, and their presence alters the material provision of Chapter 9 directly.

Staff notation was adopted, and a cipher notation representing scale degrees by numerals was adopted alongside it and circulated widely. The two differ in what they require of a reader and in what they specify.

Claim 42.2.1. (Adoption of a notation as an alteration of the reproductive dimension).

Adoption of a notation admits transmission of musical material to parties who acquire the notation and have not acquired the practice, which alters the reproductive dimension fixed in Chapter 27 and does so independently of any change in sounding organisation.

Equal division of the octave was adopted in instrument manufacture and in schooling. Its bearing upon existing repertoires is documented and is of two kinds: repertoires whose intervals differ from the equal division are altered when performed on instruments tuned to it, and repertoires notated in a system presupposing it are transmitted with those intervals fixed.

Claim 42.2.2. (Consequence of a tuning adoption for existing repertoires). *Where a tuning is adopted in instrument manufacture and in schooling, repertoires employing intervals the tuning does not supply are altered in performance upon the instruments so tuned, and the alteration follows from the material provision and requires no decision about the repertoires.*

The claim is an instance of the general form of Chapter 27 operating to exclude: a material alteration removed configurations previously admitted. It is the clearest instance in this book of an alteration whose consequence is exclusion.

42.3 Economic Organisation

This section treats provisioning.

State provision supplied schooling, military and ceremonial ensembles, and the founding of conservatories. Publication supplied song collections for school use, and the market for them was created by the schooling that used them.

Urban entertainment industries developed in this configuration, supplying performance and, in its later decades, recording.

42.4 Political and Institutional Conditions

This section treats the state undertaking. Its objective is to describe the institutions established and to identify what is novel in the arrangement.

Both jurisdictions established state institutions charged with musical matters, and introduced music into the curriculum of state schooling. Song collections were compiled for that curriculum and circulated in quantity.

Military and ceremonial bands were established, supplying a public sounding practice attached to state occasions.

Conservatories were founded, supplying the arrangement Chapter 32 identified in the Western trajectory: parties trained to a common standard, in numbers.

Claim 42.4.1. (State schooling as a channel without precedent). *Instruction in a musical practice within general state schooling transmits that practice to parties the great majority of whom will not become practitioners, which is a channel of transmission neither trajectory exhibits before this configuration.*

The claim identifies what is novel, and its significance for this book is stated. Every transmission mechanism treated in Parts III and IV operates within a body of practitioners: a lineage, a monastery, a troupe, a conservatory, a household. State schooling transmits to a population. The relations it establishes are accordingly relations between a practice and parties who stand to it as hearers and as former pupils, and Chapter 43 treats what follows.

Reform movements in both jurisdictions undertook the classification of existing practices, and the classification assigned the traditions of the preceding chapters and of Part III to categories the reforms established. Chapter 43 treats the administrative development of such classification.

42.5 Social Structure and the Division of Musical Labour

This section treats positions.

The conservatory-trained musician entered the field as a position with its own credential, training and employment.

Practitioners of the existing traditions were reclassified by the arrangements of Section 4, and the reclassification altered their standing without altering their practice. The alteration is documented and its consequences are treated in Chapter 43.

New audiences and new venues developed with the ensembles of Sections 3 and 4.

42.6 The Cultural and Theoretical Field

This section treats the articulated accounts.

A programme of constructing a national music was undertaken in both jurisdictions, and the writings of its proponents state its aims. The programmes differ between the jurisdictions and within each, and this book reports that they were undertaken and takes no position on them.

Comparative musicology arrived in this configuration as a discipline, together with its categories, and its arrival supplied the classifications by which existing practices came to be described in scholarship. Chapter 22 established that categories applied from outside a tradition import a classification the tradition may decline, and the point applies here directly.

42.7 The Relational Architecture and the Reception at Two Sites

This section supplies the chapter's principal content. Its objective is to state what arrived, what diverged between the two receptions, and what the divergence may be attributed to. It proceeds accordingly.

What arrived was a complex: instruments of a particular construction, a notation, a tuning, an ensemble organisation with an adjudicating party producing no sound, a repertory, and an institutional apparatus of schooling and conservatory training.

Claim 42.7.1. (Compound character of the arrival). *The material arriving at both sites in this configuration is a compound of instruments, notation, tuning, ensemble organisation, repertory and institutional form, and the components arrived together and were adopted separately.*

The claim bears directly upon the requirement fixed in Chapter 28, that a claim resting on the contact design state what is assumed common. Here the arrival is approximately common in its components and differs in its timing, its carriers and its quantity between the sites.

Three respects of divergence between the receptions are documented and are stated without attribution in this section; the attribution is treated in Section 8.

The two jurisdictions differed in the timing of the state undertaking and in the institutions established to conduct it. They differed in the treatment accorded to existing practices, in whether those practices were maintained within the new institutions or maintained alongside them. And they differed in the extent to which new composition was undertaken in the arriving idiom, and in the relation of such composition to existing repertories.

Claim 42.7.2. (Separability of adoption among the components). *The components of the arriving compound were adopted to differing extents at the two sites, so that adoption of a notation, of a tuning, of an ensemble organisation and of an institutional form are separable acts and were separately undertaken.*

The claim is the chapter's principal result. It establishes that reception of a musical practice is not a single act, and it supplies the terms in which Chapter 44 assesses whether the relational description of these receptions licenses statements the existing descriptions withhold.

One further observation bears on Part VI. The arriving ensemble organisation carries the arrangement Chapter 33 described: an adjudicating party producing no sound, supplying a reference constituted separately from the sounding. Where that organisation was adopted, the adjudicative position of Chapter 52 was transferred with it.

Claim 42.7.3. (Transfer of an adjudicative arrangement with an ensemble form). *Adoption of an ensemble organisation comprising an adjudicating party producing no sound transfers that arrangement into the receiving field, so that the occupancy of the position of confirmation described in Chapter 52 was altered at the receiving sites by an adoption and not by a development.*

The claim supplies Part VI with a second instance of altered occupancy, distinct in kind from the first: Chapter 33 documented an alteration arising within a trajectory, and the present

chapter documents one arriving from outside it.

42.8 The Limits of Attribution

This section states what the divergences may not be attributed to. Its objective is to apply the limits fixed in Chapter 28 to this case.

The design attributes divergence in reception to the receiving configurations. Three limits bind here.

The arrivals differed. They differed in date, in the parties carrying them, in the quantity of material and in the accompanying political circumstances, and the requirement of Chapter 28 obliges the differences to be stated where a claim rests on the design.

The receiving configurations differed in many respects at once, and the design supplies attribution to a configuration taken as a whole and to no constituent of it.

The political circumstances of the two sites in this period differed substantially, and those circumstances bear upon the state undertakings of Section 4 directly. This book reports the divergences and does not attribute them to any single constituent.

Requirement 42.8.1. (Restriction on attribution in this case). *Divergences between the two receptions are attributed to the receiving configurations taken as wholes, the respects in which the arrivals differed are stated, and no divergence is attributed to a single constituent of either configuration.*

42.9 The Problem Generated and What It Opened

This section states the succeeding problem.

The configuration established new institutions alongside existing practices and reclassified the latter. The arrangement raises the question of the standing of the existing practices within a field whose institutions were constituted for other material.

Claim 42.9.1. (Generation of the classification problem). *A configuration establishing new musical institutions alongside existing practices and classifying those practices within categories the new institutions supply generates the question of what standing the classified practices hold and by what arrangements they are maintained.*

Chapter 43 treats the configuration in which that question received administrative answers.

42.10 Summary of Results

This chapter has established the following. Adoption of a notation alters the reproductive dimension by admitting transmission to parties who acquire the notation without acquiring the practice. Adoption of a tuning in manufacture and schooling alters existing repertoires in per-

formance and requires no decision about them, which is the clearest instance in this book of a material alteration whose consequence is exclusion. Instruction within general state schooling transmits a practice to parties who will not become practitioners, a channel neither trajectory exhibits earlier. The arriving material is a compound whose components were adopted to differing extents at the two sites, so that reception is not a single act. Adoption of an ensemble organisation comprising an adjudicating party producing no sound transferred that arrangement into the receiving field, supplying Part VI with an alteration of occupancy arriving from outside a trajectory. Attribution of the divergences is restricted to the receiving configurations taken as wholes, with the respects in which the arrivals differed stated.

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Chapter 43

Administered Preservation, Reformed Ensembles, and the Contemporary Configuration

This chapter treats the last of the seven East Asian configurations. Its role is to describe a configuration in which musical practice is provisioned substantially by the state and by commercial distribution, in which ensembles were reformed on an imported organisational model, and in which the maintenance of existing practices became an administrative undertaking. It undertakes to establish four things: that the reformed ensemble imports the organisational arrangement described in Chapter 33 into repertoires that had not employed it; that designation of a practice as heritage is an administrative act with documented consequences for the practice designated; that the arrangement stands in a specifiable relation to the administrative sustaining of differentiation described in Chapter 39; and that interruption and reconstitution of institutions in this configuration bear upon the documentation on which Part III relies. It follows the template of Chapter 28.

43.1 The Configuration in Outline

This section identifies what the chapter treats.

The configuration obtains from the middle of the twentieth century to the present, in China principally, with material from Japan and Korea where the arrangements are comparable. The practices comprised are the reformed ensembles, conservatory training, the maintenance of designated traditions, commercial popular fields, and the continuing practices of Part III.

The documentation is administrative, commercial and recorded, and is abundant. Chapter 13 recorded that documentation of a living tradition is evidence about the date of documentation, and the point governs this chapter throughout, since the great majority of the documentation on which Part III relies was produced within this configuration.

43.2 Material and Technical Conditions

This section treats the material dimension.

Instruments of the existing traditions were reformed in construction across this configuration: ranges extended, volumes increased, families of related instruments constructed to

cover registers, and tuning fixed to equal division.

Claim 43.2.1. (Reform of instruments as an alteration of available relation). *Reconstruction of instruments to extend range, increase volume and fix tuning alters what Chapter 9 identified as the bound upon available relations, so that configurations previously excluded by material constraint became admitted and configurations depending upon the earlier construction became excluded.*

The claim records that the alteration operates in both directions, which is the point Chapter 42 established for the adoption of a tuning and which recurs here at the level of the instruments themselves.

Recording, broadcast and network distribution obtain in this configuration as they do in Chapter 35, and the consequences described there apply.

43.3 Economic Organisation

This section treats provisioning.

State employment supplied ensembles, conservatories and research institutions. Commercial distribution supplied the popular fields. Designated traditions were provisioned in part by administrative support attached to their designation.

The three arrangements coexist, and a practice may be provisioned by more than one.

43.4 Political and Institutional Conditions

This section treats the administrative undertakings, and it is the section bearing most directly on the argument.

Cultural policy in this configuration has at points prescribed the forms and content of musical practice, and at points interrupted the institutions maintaining existing traditions. This book reports that such policies obtained and takes no position upon them. Their consequence for the argument is evidential and is stated in Section 8.

Designation of practices as heritage, under national and international instruments, obtains in this configuration. The designation attaches administrative categories, support, criteria of authenticity, and in some arrangements the identification of individuals as bearers of a practice.¹

Claim 43.4.1. (Administrative constitution of a maintained practice). *Designation of a practice as heritage attaches to it a category, a criterion of correct performance and an apparatus of support, so that the maintenance of the practice comes to depend upon arrangements external to the community that transmitted it.*

¹The standard treatment of the policy and its documented effects across this region is Keith Howard, ed., *Music as Intangible Cultural Heritage: Policy, Ideology, and Practice in the Preservation of East Asian Traditions* (Farnham: Ashgate, 2012), including Helen Rees, "Intangible Cultural Heritage in China Today," 23–54.

The claim connects to Chapter 39 and the connection is worth stating. There, differentiation among repertoires was sustained by an administrative classification maintained by a court establishment. Here, the persistence of a practice is sustained by an administrative designation maintained by a state apparatus. The two are separated by more than a millennium and are instances of one form: differentiation and persistence sustained by an institution external to the practice.

Claim 43.4.2. (Recurrence of administrative sustaining). *Sustaining of a musical practice or of a distinction among practices by an institution external to them recurs in this trajectory across a very long span, in the classification of court repertoires by provenance and in the designation of practices as heritage.*

The claim is offered as a recurrence and not as a continuity. Chapter 26 fixed the criteria distinguishing independent convergence from historical contact, and the two instances here stand within one administrative tradition, so that contact cannot be excluded and the recurrence is not evidence of an invariant.

43.5 Social Structure and the Division of Musical Labour

This section treats positions.

The reformed ensembles employ musicians in graded positions on the model described in Chapter 32, with sections, principals and an adjudicating party producing no sound.

Designation of individuals as bearers of a practice constitutes a position with no counterpart in the preceding configurations of this trajectory: a party whose standing within a practice is conferred administratively.

Claim 43.5.1. (Administrative conferral of standing within a practice). *Where an individual is designated as a bearer of a practice by an administrative act, that party's standing within the practice is conferred from outside the community transmitting it, which alters the occupancy of the position of confirmation described in Chapter 52.*

The claim supplies Part VI with a third instance of altered occupancy, alongside the alteration arising within a trajectory (Chapter 33) and the alteration arriving by adoption (Chapter 42). This one arrives by administrative designation.

43.6 The Cultural and Theoretical Field

This section treats the articulated accounts.

Research on the ritual traditions of Part III developed in this configuration into an established field with its own institutions, methods and publications, and the scholarship on which Part III relies was produced substantially within it.

Popular fields developed with their own critical literatures and their own transnational

circulation.

43.7 The Relational Architecture

This section describes the configuration in the terms of Part II. Its objective is to state what the reformed ensemble imports and what follows.

The reformed ensemble is organised in sections of related instruments, plays from notated parts specifying material in detail, and is coordinated by an adjudicating party producing no sound who supplies a reference constituted separately from the sounding.

Claim 43.7.1. (Importation of an organisational arrangement into a distinct repertory). *The reformed ensemble applies to instruments and repertories of this trajectory the organisational arrangement described in Chapters 32 and 33, comprising sectional constitution, detailed notational specification and an unsounded reference supplied from outside the sounding body.*

The claim identifies a case of considerable interest for this book, and its interest is stated. Chapter 28 established the contact design, in which a common arrival meets differing receivers. Here a receiver adopted an organisational arrangement and applied it to material that had been organised otherwise, so that the same repertory is available in two organisational settings.

What such a case could establish, and what would be required, is stated in Chapter 44.

The traditions of Part III continue within this configuration, and their sounding organisation as documented is the sounding organisation of practices maintained under the conditions described in this chapter.

43.8 The Evidential Consequence for Part III

This section states a consequence bearing on the whole book. Its objective is to record what this configuration implies for the material of Part III.

Part III described eleven traditions from documentation produced substantially within this configuration. Chapter 13 recorded four processes reshaping documented practice, and this chapter has described three of them obtaining here: institutional reconstitution following interruption, standardisation through centralised training and publication, and heritage designation.

Claim 43.8.1. (Location of Part III's documentation within this configuration). *The documentation from which Part III's descriptions were drawn was produced within the configuration described in this chapter, so that those descriptions describe practices maintained under its conditions, and their extension to earlier periods is inference in the sense of Chapter 13.*

The claim restates in historical terms a caution Part III entered chapter by chapter, and it is placed here because this chapter supplies the description of the conditions concerned. Its

effect is that the two Parts are connected: Part IV's last East Asian configuration is the setting in which Part III's evidence was gathered.

43.9 Summary of Results

This chapter has established the following. Reconstruction of instruments to extend range, increase volume and fix tuning alters the bound upon available relations in both directions, admitting configurations previously excluded and excluding configurations depending upon the earlier construction. Designation of a practice as heritage attaches a category, a criterion of correct performance and an apparatus of support, so that maintenance comes to depend upon arrangements external to the transmitting community; this and the administrative classification of court repertoires described in Chapter 39 are instances of one form, offered as a recurrence within a single administrative tradition and not as evidence of an invariant. Administrative designation of individuals as bearers confers standing within a practice from outside the transmitting community, supplying Part VI with a third mode of altered occupancy. The reformed ensemble imports sectional constitution, detailed specification and an unsounded reference into repertoires organised otherwise. The documentation from which Part III's descriptions were drawn was produced within this configuration.

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Chapter 44

Assessment of the Relational Description Against the Descriptions It Supplements

This chapter closes Part IV and discharges the requirement entered in Chapter 29. Its role is to assess whether the relational description of musical configurations licenses statements that the existing descriptions withhold, and to report the assessment without regard to which outcome favours the book. It undertakes to establish five things: the standard by which the assessment proceeds; that one of the three additions claimed in Chapter 29 licenses statements no single literature supplies, and that a result obtained in this Part demonstrates it; that a second licenses a connection whose value is real and narrower than claimed; that the third is largely a reformatting and is reported as such; and that the case bearing on the claim of Chapter 49 is suggestive and does not establish it. It closes by stating what the book can now say about the configuration from which its central problem was drawn. It proceeds in seven sections.

44.1 The Standard of the Assessment

This section fixes the standard. Its objective is to state the test and to identify what fails it.

Chapter 2 fixed the standard for an integrative account: it is supported where it licenses a statement in one domain drawn from a result established in another, which neither domain licenses alone.

Two outcomes fail the standard and are distinguished, since they are easily confused. A description that restates in a new vocabulary what an existing description states fails it, however consistent the new vocabulary. And a description that connects two literatures without licensing any statement beyond what each supplies separately fails it likewise: a bridge carrying no traffic is a bridge.

Requirement 44.1.1. (Reporting of the assessment). *Each addition claimed in Chapter 29 is assessed against the standard of Chapter 2, and an addition failing the standard is reported as failing it.*

44.2 The First Addition: The Relational Description of Configurations

This section assesses the first addition. Its objective is to establish that it passes the standard, and to exhibit the result demonstrating that it does. It proceeds by stating the addition, giving the demonstrating result, and stating what follows.

The first addition is the description of configurations by the relations they sustain, in the vocabulary of Part II, where existing descriptions proceed by style.

The demonstrating result is the following. Across Parts III and IV this book has described five arrangements in which a fixed transmitted layer is realised by a variable layer supplied at performance: a fixed liturgical text with lineage-specific melodic realisation (Chapter 14); a fixed text with signs determining melodic figures whose realisations diverge by community (Chapter 21); a fixed text with melodic shape transmitted by instruction (Chapter 16); a notated bass with figures realised by the performer (Chapter 30); and a fixed tune to which texts are composed (Chapter 40).

Claim 44.2.1. (Cross-domain identity of the fixed-and-variable arrangement). *Five practices belonging to five literatures that do not cite one another exhibit one relational arrangement, in which a transmitted fixed layer admits a range of realisations supplied at performance, and the identity is statable in the vocabulary of Part II and in no vocabulary belonging to any one of the literatures.*

The claim alone would not settle the assessment, since an identity may be stated without licensing anything further. What settles it is that a result was obtained through the identity which neither side could obtain alone.

Chapter 26 drew from three liturgical cases the result that melodic realisation is under-determined by text and prescription, and the result depended upon the text being the fixed layer. Chapter 40 then established that in a practice of this trajectory the melody is fixed and the text is composed to it. The conjunction yields a statement neither literature supplies: that the assignment of fixity between a verbal and a melodic layer is a property of the practice, so that the liturgical arrangement is one of two available and its prevalence in liturgical settings requires explanation from the setting.

Claim 44.2.2. (Licensing of a statement by the cross-domain identity). *The result that fixity is assigned by the practice, and that the liturgical arrangement is one of two, was obtained by placing a result from the study of Chinese song against a result from comparative liturgical study, and neither literature licenses it alone.*

The first addition accordingly passes the standard, and the passage rests on this instance. The chapter records that one demonstrated instance is a modest basis, and that the addition's further yield is a matter for work beyond this book.

44.3 The Second Addition: Conditions as Admitting and Excluding

This section assesses the second addition, and the assessment is largely negative. Its objective is to state what the addition supplies and to report where it fails the standard.

The second addition is the treatment of conditions as admitting and excluding configurations, in the form fixed in Chapter 10, where existing descriptions relate conditions to music causally or by correspondence.

What the addition supplies is a uniform form of statement. That commercial provisioning at Venice altered the economic constituent and admitted assembled forces (Chapter 30); that a bell set is producible only by a ruling authority (Chapter 37); that adopting a tuning excluded repertoires employing other intervals (Chapter 42): each is stated in one form across trajectories and periods.

Claim 44.3.1. (Uniformity without additional licence). *The treatment of conditions as admitting and excluding configurations states in one form what the economic, institutional and organological histories of each domain state in their own forms, and the statements it yields for any single case are statements those histories already supply.*

The addition accordingly fails the standard of Chapter 2 for the single case, and it is reported as failing.

Two qualifications are entered and neither rescues it. The uniform form permits comparison across domains, which is a service; but comparison is the first addition's service and is credited there. And the form obliges an author to identify the excluding constituent, which is a discipline; but a discipline that improves the statement of a result does not license a result.

One instance stands closer to the standard and is recorded without being claimed. The distinction between admission and adoption, fixed in Chapter 10, separates two questions that the histories treat together, and Part IV has used it repeatedly to withhold an inference. Whether withholding an inference constitutes licensing a statement is a question this chapter leaves open.

44.4 The Third Addition: Concurrency and the Occupancy of the Adjudicative Position

This section assesses the third addition. Its objective is to establish that it licenses a statement, and to state that the statement is narrower than the concurrent treatment promised.

The third addition is the concurrent treatment of two trajectories with their contacts.

The statement it licenses concerns the occupancy of the position of confirmation. Three alterations of occupancy have been documented in this Part, and they arise by different routes: within a trajectory, through the emergence of a party producing no sound (Chapter 33); by adoption, where an ensemble organisation carrying that arrangement was taken up at a receiving site (Chapter 42); and by administrative designation, where standing within a practice

is conferred from outside the transmitting community (Chapter 43).

Claim 44.4.1. (Three routes to one alteration). *The occupancy of the adjudicative position within a musical field may be altered by development within a trajectory, by adoption of an organisational form, and by administrative designation, and the three routes issue in arrangements sharing the property that standing is conferred from a position constituted separately from the sounding.*

The claim is licensed by the concurrent treatment and by nothing else. The history of conducting, the history of musical reform in the receiving jurisdictions, and the study of heritage administration are three literatures, and no one of them treats the three alterations as instances of one form.

The narrowing is recorded. Chapter 28 claimed that concurrency makes couplings between trajectories constituents of each, and the claim was general. What Part IV has delivered is one connection, concerning one position, drawn from three documented cases. The remaining couplings between the trajectories have been described and have licensed no comparable statement.

44.5 The Case Bearing on Structural Constraint upon Meaning

This section discharges the obligation entered in Chapter 49. Its objective is to present the case, to state what it supports, and to state what it does not establish.

Chapter 49 claimed that the position an element occupies within a relational organisation constrains the meanings it may stably carry, and specified that a test would consist in a documented case of an ascribed meaning failing to hold among participants, with the failure attributable to structural position.

The case is the following. A symphonic work of the later 1930s was presented with an official characterisation, and the phrase by which that characterisation is known appeared in an unsigned newspaper article and not over the composer's name.¹ A contrary characterisation was advanced decades later on the authority of a memoir whose authentication was subsequently undermined by the demonstration that passages opening several of its chapters reproduce previously published articles.² The interpretive dispute has continued and is substantial.³

The evidence bearing on the criterion of Chapter 49 is of a particular kind, and it is the reason this case was selected. A study of a large body of recordings has examined the tempo taken in the work's closing passage across some eight decades, and has found the question entangled with a dispute over a notated tempo marking whose correctness is contested.⁴

¹Laurel E. Fay, *Shostakovich: A Life* (New York: Oxford University Press, 2000), establishes the provenance of the phrase.

²Laurel E. Fay, "Shostakovich versus Volkov: Whose Testimony?" *The Russian Review* 39, no. 4 (1980): 484–493.

³Richard Taruskin, "Public Lies and Unspeakable Truth: Interpreting Shostakovich's Fifth Symphony," in David Fanning, ed., *Shostakovich Studies* (Cambridge: Cambridge University Press, 1995), 17–56; and the responses to it.

⁴Peter Kupfer, "Of Majesty, Mockery, and Misprints: The Coda of Shostakovich's Fifth on Record," *Journal of Musicological Research* 41, no. 2 (2022): 62–104, DOI 10.1080/01411896.2022.2074845.

Claim 44.5.1. (Support without establishment for the structural constraint). *The case exhibits an ascribed meaning that failed to hold uniformly among performing parties, and exhibits the dispute over the meaning as entangled with a dispute over a notated determination of the passage, which is consistent with the claim of Chapter 49 and falls short of establishing it.*

Two reasons for the shortfall are stated. The case is single, and Chapter 49 specified a documented case without specifying how many. And the attribution of the failure to structural position competes with attributions to the political circumstances of the ascription and to the contested provenance of both characterisations, and the evidence assembled here supports no ranking among them.

The claim of Chapter 49 accordingly stands as it was entered, with one case consistent with it and no case establishing it.

44.6 The Specification Thread Assembled

This section assembles the thread opened in Chapter 30 and discharges the reference entered in Chapter 55. Its objective is to state the thread as a whole and to say what it shows.

The thread runs as follows. A configuration placing part of the sounding organisation in the hands of realising performers generates pressure toward fuller specification wherever competence, acceptability or common training cannot be assumed (Chapter 30). Material formerly realised was assigned to specified parties by notation (Chapter 31). Specification reached its fullest extent, with dynamic, articulation, duration and manner of production determined (Chapter 34). And in the assembled organisations of Chapter 35 the determination extends to the balance among parties, set outside the performing action.

Claim 44.6.1. (Direction of the specification thread and its conditions). *Across the Western configurations the layer supplied by performing parties contracted and the layer determined by specification expanded, and the contraction accompanied the separation of composing from performing parties, the assembly of ensembles from separately trained parties, and the standardisation of instruments.*

The claim states a direction and attaches conditions, and it withholds two things. It withholds any assessment of the direction, by the prohibition of Chapter 5. And it withholds the inference that the conditions produced the contraction, by the underdetermination established in Chapter 27.

One test remains specified and unperformed, and it is recorded here as the principal piece of work this Part identifies and does not carry out. Chapter 43 described a repertory organised in two settings: in its transmitted arrangement, and within a reformed ensemble employing sectional constitution, detailed specification and an unsounded reference. The relational account predicts that the two differ in coordination mode, in the distribution of adjudicative position, and in the placements available to a party, and predicts this independently of whether the pitch material differs. A study comparing the two settings on those variables would test the account against a description proceeding by style, which would attribute the difference to

the adoption of a foreign manner.

Requirement 44.6.2. (Standing of the unperformed test). *The comparison of a repertory in its transmitted and its reformed organisational settings is specified here as a test of the relational account against a stylistic one, and is not performed in this book.*

44.7 The Symphonic Configuration and What May Now Be Said of It

This section closes Part IV by returning to the configuration from which the book's central problem was drawn. Its objective is to state what the preceding chapters permit to be said of it.

The symphonic configuration assembles many parties, delivering differentiated material, in one temporal field extending over a long span, with the parties remaining distinguishable throughout.

Four conditions admitting it have been identified in this Part. Capital sufficient to maintain a standing ensemble and a purpose-built hall (Chapter 32). Systematic training supplying parties of known and common competence (Chapter 32). Notational specification determining what each party delivers (Chapters 31 and 34). And an unsounded reference supplied from outside the sounding body (Chapter 33).

Claim 44.7.1. (Conditions of the symphonic configuration). *The symphonic configuration is admitted by the conjunction of standing provision, common training, notational determination of parts, and an adjudicating party producing no sound, and the withdrawal of any one of them excludes it at the scale at which it is ordinarily realised.*

Two observations follow, and the second is the one the book's opening required.

The sustaining of differentiation in this configuration is achieved by specification and by an external reference. Each party remains distinguishable because its material is determined and its placement is supplied. Chapter 39 described differentiation sustained by administrative classification, and Chapter 16 described coordination sustained by common acquisition. The symphonic configuration is a third arrangement, and the three are alternatives.

Claim 44.7.2. (Standing of the symphonic case within the book's problem). *The symphonic configuration sustains differentiation among many parties by determining their material and supplying their placement from outside their sounding, which is one arrangement among those documented in this book and holds no privileged relation to the problem stated in Chapter 1.*

The claim completes the demotion begun in Chapter 1. The configuration from which the book's problem was drawn is, on the evidence assembled, one solution among several, and its prominence in the literature reflects the documentation available for it and the institutions maintaining it.

44.8 Summary of Results

This chapter has established the following. Of the three additions claimed in Chapter 29, the first passes the standard of Chapter 2 on the strength of one demonstrated instance, in which the assignment of fixity between verbal and melodic layers was established by placing a result from the study of Chinese song against a result from comparative liturgical study. The second fails the standard for the single case, supplying a uniform form of statement where the domain histories supply the statements themselves, and it is reported as failing. The third licenses one statement, that the occupancy of the adjudicative position may be altered by development, by adoption and by administrative designation, with the three issuing in arrangements sharing one property; the delivery is narrower than the concurrent treatment promised. The case bearing on structural constraint upon meaning is consistent with the claim of Chapter 49 and does not establish it, and competing attributions are not ranked. The specification thread runs toward fuller determination across the Western configurations, with conditions attached and with no assessment of the direction. The symphonic configuration is admitted by four conditions and sustains differentiation by determination and external reference, which is one arrangement among those documented and holds no privileged relation to the book's central problem.

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Part V

Existence and Being

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Chapter 45

Temporal Constitution Within Musical Practice

This chapter opens the second movement of the book's question, concerning the modes of existence and of temporality that musical practice institutes. Its role is to state what musical organisation contributes to the constitution of time for those within it, and to do so while conceding the substantial literature already occupying the territory. It undertakes to establish three things: that a musical field supplies its participants with a temporal organisation possessing properties the clock does not supply; that the retrospective reorganisation of earlier material by later material is a documented property of musical experience and is inherited here from established work; and that the regimes of temporal organisation exhibited by the practices of Parts III and IV may be distinguished by stated criteria. It proceeds in five sections.

A concession is stated at the head of the chapter. The philosophical treatment of time in relation to music is heavily occupied. Accounts of the constitution of temporal experience through retention and anticipation, of duration as distinct from measured time, and of the temporality of a being for whom its own existence is at issue, all antedate the present work and are inherited by it. Within music specifically, accounts of expectation and its violation, of meter as a process of becoming, and of the varieties of musical time have been developed at length. The contribution claimed here is confined to Section 45.4 and to Chapter 47, and the remainder of the chapter reports inherited positions.

45.1 Temporal Organisation as Supplied by a Musical Field

This section states what a musical field supplies. Its objective is to identify the properties of musical temporal organisation that a clock does not supply, and to establish that participants are placed within an organisation, and occupy more than a duration. It proceeds by treating three properties.

The first property is *differentiated position*. Within a referenced field in the sense of Chapter 6, the positions of the reference are unequal: some carry weight and others do not, and an event's placement is described by which it occupies. A participant within such a field occupies a position within a grouping, and the position has properties that a moment of clock time lacks.

The second property is *directed expectation*. A participant competent in a practice antici-

pates continuations, and the anticipations are specific: a particular continuation is expected at a particular point, and its delay or withholding is perceptible as such. The literature on musical expectation has established the phenomenon in detail and this book inherits it.

The third property is *shared placement*. Participants within a common field occupy the same temporal organisation, and their coordination consists in that occupation. The property distinguishes musical temporality from the temporality of a solitary experience, and Chapter 48 develops the consequence.

Claim 45.1.1. (Supply of temporal organisation by a musical field). *A musical field supplies its participants with differentiated positions, directed expectations and a shared placement, none of which is supplied by the measurement of elapsed duration.*

45.2 Retention, Anticipation and the Present of a Passage

This section reports the constitution of the musical present. Its objective is to state the inherited account and to identify what the practices of Part III add to it.

The inherited account holds that the present of an experience is not an instant. A sounding present includes what has just passed, retained in a manner distinct from recollection, and what is anticipated, held in a manner distinct from imagination. The account was developed philosophically in the analysis of internal time-consciousness and has been applied to music extensively.

The consequence for the description of musical relation is direct and is used throughout this book. A relation between an event and its predecessor is available within experience because the predecessor is retained. Were each event to vanish completely upon its cessation, the relations of Chapter 7 would obtain among the events and would be unavailable to any participant.

Claim 45.2.1. (Dependence of relational audibility on retention). *The relations among successive sounding events are available within experience because prior events are retained within the present of the passage, so that the audibility of musical relation depends upon a temporal constitution the practice does not itself supply.*

The claim is a concession as much as a result. The relational organisation this book describes is audible only to a participant constituted in the manner the inherited account describes, and the account is not the book's own.

45.3 Retrospective Reorganisation

This section treats the alteration of earlier material by later material. Its objective is to state the phenomenon, to record its established status, and to identify the structural feature of musical practice that makes it possible.

The phenomenon is that material heard earlier acquires a different character in the light

of material heard later. A passage heard as stable is heard, after what follows it, as having been preparatory. A repetition alters the material it repeats, since the first statement becomes, retrospectively, a first statement.

The phenomenon is established in the music-theoretical and psychological literature and is inherited here. What this book adds is a structural observation.

Claim 45.3.1. (Openness of relational determination in an unfolding field). *Within a musical field whose unfolding is incomplete, the relations in which an event stands are not closed at the moment of its occurrence, since events yet to occur may enter into relations with it.*

The claim connects the phenomenon to the ontology of Chapter 3. Where the identity of a part is supplied by its relations, and where the set of its relations remains open while the field unfolds, the identity of a part is likewise open. The consequence is developed in Chapter 46.

45.4 The Regimes of Temporal Organisation

This section states the chapter's own contribution. Its objective is to distinguish the regimes of temporal organisation exhibited by the practices treated in this book, by criteria drawn from the descriptive apparatus of Part II. It proceeds by giving the criteria and the regimes they generate.

Three criteria are used. The first is whether the field is referenced or unreferenced, in the sense of Chapter 6. The second is whether the organisation is closed, in the sense that the practice fixes a termination, or open, in the sense that the practice admits continuation without a fixed end. The third is whether the material returns to states previously occupied, or proceeds without return.

Four regimes are distinguished by these criteria and are exhibited in the practices of Parts III and IV.

Recurrent organisation is referenced, closed at each iteration, and returns. Material is disposed in cycles whose completion returns the field to a prior state. Liturgical practices distributing material across a calendrical cycle exhibit it at the scale of the year, and the practices of Chapter 20 exhibit it at both the scale of the service and the scale of the year.

Directed organisation is referenced, closed, and proceeds without return. Material is disposed so that a terminal state is reached that no earlier state anticipates. Part IV treats the historical practices exhibiting it.

Sustained organisation is unreferenced, closed by external determination, and neither returns nor proceeds toward a terminal state. The delivery continues while the material lasts. The text-governed practices of Chapters 21 and 22 exhibit it, since the termination is supplied by the exhaustion of the text.

Open organisation admits continuation without a fixed termination, and its duration is determined by the occasion. Practices in which delivery continues while an action proceeds exhibit it.

Claim 45.4.1. (Independence of the temporal regime from the elaboration of the field). *The temporal regime of a practice is independent of its degree of musical elaboration, so that practices of minimal elaboration exhibit each of the four regimes and practices of extensive elaboration likewise.*

The claim is required by the material of Part III, and it blocks an association that would otherwise suggest itself between elaboration and directedness.

45.5 The Standing of the Chapter's Claims

This section states what the chapter has and has not established. Its objective is to separate the inherited from the contributed.

Three positions are inherited and are used throughout the book without being defended here: that the present of an experience includes retention and anticipation; that competent participants form specific expectations whose violation is perceptible; and that earlier material is retrospectively reorganised by later material.

Two claims are contributed. The relations in which an event stands are not closed at the moment of its occurrence, which connects retrospective reorganisation to the ontology of the part. And the four regimes of Section 45.4 are distinguished by criteria drawn from the descriptive apparatus of Part II and are independent of elaboration.

One limitation is recorded. The regimes are distinguished by criteria applying to a practice's organisation of its material, and they carry no account of the experience of participants beyond what Section 1 states. Chapter 48 treats the experiential question and states its own limits there.

45.6 Summary of Results

This chapter has established the following. A musical field supplies differentiated positions, directed expectations and a shared placement, none supplied by the measurement of elapsed duration. The audibility of relations among successive events depends upon a temporal constitution described by an inherited account, so that the relational organisation this book describes is available to participants only under conditions the book does not itself establish. The relations in which an event stands remain open while the field unfolds, which connects the established phenomenon of retrospective reorganisation to the account of the part given in Chapter 3. Four regimes of temporal organisation are distinguished by reference, closure and return, and the regime of a practice is independent of its degree of elaboration.

Chapter 46

The Mode of Existence of a Musical Entity

This chapter treats what it is for a musical entity to exist. Its role is to draw out the ontological consequence of the account of the part given in Chapter 7, and to state it in terms available to the comparative and historical material of the book. It undertakes to establish four things: that a musical entity possesses no properties independent of the relations constituting it, and that the claim is stronger than an ordinary claim of relational dependence; that silence and absence occupy structural positions and are therefore constituents of a field; that the identity of a musical entity is the identity of a trajectory; and that the ontological position stated here is inherited in substance from process philosophy and is contributed only in its application. It proceeds in five sections.

46.1 Constitution Without Antecedent Properties

This section states the ontological position. Its objective is to distinguish the claim made here from a weaker claim with which it is commonly confused, and to give the argument. It proceeds by stating the weaker claim, stating the stronger, and giving the argument for the stronger.

The weaker claim holds that musical entities possess properties of their own and stand in relations besides. On this account a pitch is a pitch independently, and the intervals in which it stands are further facts about it.

The stronger claim holds that the properties by which a musical entity is identified within a practice are supplied by the relations in which it stands.

The argument is that of Chapter 7, applied at the level of the single event. A pitch functions within a practice as a point of stability, as requiring continuation, as the answer to a preceding event, or as none of these, and which of these it is depends upon the material surrounding it. The same acoustic frequency occupies different positions in different practices and at different points within one practice.

Claim 46.1.1. (Relational constitution of musical identity). *The properties by which a musical entity is identified within a practice are supplied by the relations in which it stands within that practice, so that an entity removed from those relations retains its acoustic description and loses its musical identity.*

The claim's scope is stated to prevent overreach. It concerns identification within a practice. The acoustic properties of a sounding event are not relational in this sense, and nothing here denies them. What is denied is that the acoustic description determines the musical identity.

46.2 Absence as a Constituent of a Field

This section treats silence. Its objective is to establish that positions unoccupied by sounding events are constituents of a musical field, and to identify the conditions under which this holds. It proceeds by stating the position, giving the conditions, and recording the consequence.

Within a referenced field, positions of the reference may be occupied or unoccupied, and an unoccupied position is available to a participant as such. Within an unreferenced field, a delay between events is available where the practice supplies an expectation against which the delay is measured.

Claim 46.2.1. (Structural presence of absence). *An unoccupied position within a musical field is a constituent of that field where the practice supplies a determination against which its unoccupancy is registered, and it is unavailable as a constituent where no such determination obtains.*

The condition is what prevents the claim from becoming vacuous. Silence before a performance begins occupies no position and constitutes nothing. Silence at a point where a participant expects an event is a constituent.

The consequence for the ontology is that a musical field comprises more than its sounding events. A description recording only what sounded omits the positions left unoccupied, and those positions carry relations in the sense of Chapter 3.

46.3 Identity as the Identity of a Trajectory

This section treats the persistence of a musical entity through time. Its objective is to state what the identity of such an entity consists in, and to draw the consequence for the description of musical material. It proceeds by stating the position, giving the case that motivates it, and recording the qualification.

A musical entity of any extent beyond the single event is spread across time, and its parts do not coexist. What identifies it is the ordered course it takes.

The case motivating the position is thematic material treated by a practice as persisting through alteration. Where such material is transposed, augmented, ornamented or reduced in the manner of Chapter 7, no acoustic property is common to all its appearances. What is common is the course.

Claim 46.3.1. (Trajectory as the bearer of musical identity). *A musical entity persisting through alteration is identified by the ordered course of relations among its events, and no property of its sound-*

ing realisations need be common to all of them.

A qualification is recorded and it is the one fixed in Chapter 7: which alterations preserve identity is a property of the practice, and the claim is stated relative to the operations a practice admits.

The consequence for Chapter 45 is that the openness of relational determination established there extends to identity. An entity whose identity is supplied by its course has an identity that is incomplete while the course continues.

46.4 The Ontological Position and Its Antecedents

This section states the relation between the position of this chapter and existing philosophical accounts. Its objective is to concede what is inherited and to state what is contributed. It proceeds by identifying the antecedents and stating the difference.

The position stated in Sections 1 to 3 is, in its general form, that of process philosophy: that the constituents of the world are occasions constituted by their taking up of what precedes them, possessing no properties antecedent to that taking up, and passing into the constitution of what follows.¹

The application of that position to music is likewise antecedent, and the concession requires naming, and allusion will not serve. Christopher Hasty's account of meter treats metrical organisation as a process of projection in which completed, durationally determinate events condition newly emerging ones, and is developed on explicitly Whiteheadian grounds.²

Claim 46.4.1. (Anticipation of the present position by an existing account of meter). *The claim of Section 3, that a completed course of relations is a determinate object which subsequent practice takes up, is anticipated in its substance by Hasty's account of projection, and this book claims no priority for it.*

The claim is entered because the resemblance is close and the temptation to leave it unstated is correspondingly strong. What separates the two is the object treated: Hasty treats metrical organisation within a passage, and the present chapter treats the identity of musical entities across performances and across traditions.

The position of this book is that account applied to the material of Parts III and IV, and the application is where any contribution lies. Three points of application may be stated.

The first is the comparative application. The practices of Part III differ in the operations under which they treat material as preserved, and the differences are documented. A general ontological account of persistence through alteration acquires, in this material, a set of cases in which the admitted operations differ and are recorded.

¹Alfred North Whitehead, *Process and Reality: An Essay in Cosmology* (New York: Macmillan, 1929; corrected ed. New York: Free Press, 1978).

²Christopher F. Hasty, *Meter as Rhythm* (New York: Oxford University Press, 1997); twentieth-anniversary edition, 2020.

The second is the historical application. Part IV treats practices in which the operations admitted changed, and the ontological claim of Section 3 therefore acquires a historical dimension: what counts as the same material altered over the period treated.

The third is the connection to the account of the field. The ontological claim concerns entities within a musical field, and Chapter 10 defines the field to include parties, provision and institutions. The claim therefore extends: a party's position within a practice is likewise constituted by relations, and Part VI develops the consequence.

Claim 46.4.2. (Inheritance of the ontological position). *The account of musical existence given in this chapter is inherited in substance from process philosophy and from its established application to musical time, and the contribution claimed is its application to the comparative and historical material of this book.*

46.5 The Analytic Debate on the Identity of a Work

This section treats a literature the preceding sections have not engaged. Its objective is to state the debate, to say what the position of this chapter amounts to within it, and to record honestly what the chapter does not settle. It proceeds by giving the positions, locating the present account among them, and stating the limitation.

A sustained analytic literature asks what a musical work is and under what conditions two performances are performances of one work. Four positions may be distinguished.

The first holds that a work is a type or kind of sound-structure, eternally existent and therefore discovered by a composer and not made.³ The second holds that a work is a structure as indicated by a particular composer at a particular time, which is proposed in order to secure that works are created, that they are finely individuated, and that performance means belong to their identity.⁴ The third identifies the work with the class of performances complying with a notated specification.⁵ The fourth treats the work as a schematic structure containing places of indeterminacy which performance fills.⁶ Accounts tying works to performance practices, and admitting that works differ in how much they fix, occupy an intermediate position.⁷

A historical position stands apart from these and bears directly upon Part IV. On it, the work-concept became regulative for musical practice only from around 1800, so that the question what a work is has a determinate historical scope.⁸

³Julian Dodd, *Works of Music: An Essay in Ontology* (Oxford: Oxford University Press, 2007).

⁴Jerrold Levinson, "What a Musical Work Is," *The Journal of Philosophy* 77, no. 1 (1980): 5–28, reprinted in Levinson, *Music, Art, and Metaphysics* (Ithaca: Cornell University Press, 1990), 63–88.

⁵Nelson Goodman, *Languages of Art: An Approach to a Theory of Symbols* (Indianapolis: Bobbs-Merrill, 1968; 2nd ed. Indianapolis: Hackett, 1976). The standard objection is that exact compliance makes a single wrong note sufficient for a different work.

⁶Roman Ingarden, *The Work of Music and the Problem of Its Identity*, trans. Adam Czerniawski (Berkeley: University of California Press, 1986).

⁷Stephen Davies, *Musical Works and Performances: A Philosophical Exploration* (Oxford: Clarendon Press, 2001).

⁸Lydia Goehr, *The Imaginary Museum of Musical Works: An Essay in the Philosophy of Music* (Oxford: Clarendon Press, 1992; rev. ed. Oxford: Oxford University Press, 2007). The dating is contested: Reinhard Strohm argues for Renaissance precedents substantially earlier, and Goehr's rejoinder appears in the revised edition. This book adopts neither dating.

The position of this chapter within that debate is stated exactly, and it is a modest position. This chapter has advanced no criterion of work-identity. It has advanced a criterion of *material-identity* relative to a practice: two performances realise the same material where the relations constituting it correspond, and which alterations preserve those relations is a property of the practice, as Chapter 7 fixed.

Claim 46.5.1. (Distinctness of the question addressed here). *The account of identity given in this chapter answers the question when two performances realise the same material within a practice, and answers no question about the existence, creation or individuation of works, so that it stands beside the analytic debate on work-identity and settles no issue within it.*

Two consequences follow and both are limitations.

The account does not determine whether musical works are created or discovered, and supplies no argument on that question. A reader seeking one should read the literature cited above.

And the account's practice-relativity has a cost that the analytic debate exists partly to avoid. Where the operations preserving identity are fixed by the practice, two communities may disagree about whether a given performance realises the material, and this chapter supplies no means of adjudicating between them. Chapter 68 states the position formally and reaches the same limit.

Claim 46.5.2. (Cost of practice-relativity). *An account making the operations that preserve identity a property of the practice supplies no adjudication between practices that differ over whether a performance realises a given material, and the analytic accounts of work-identity are in part attempts to supply what is here withheld.*

46.6 What the Position Forbids

This section states the consequences of the position for the argument of the book. Its objective is to identify two forms of description the position excludes.

The first excluded form is the description of a musical practice by an inventory of its sounding materials. An inventory of pitches, instruments and durations records the acoustic constituents and omits the identities the practice maintains. Descriptions in this book accordingly proceed by relations, in the five headings fixed in Chapter 10.

The second excluded form is the assertion that two practices share material on the ground that their sounding realisations resemble one another. Where identity is supplied by relations within a practice, sameness of material across practices requires that the relations correspond, and acoustic resemblance establishes no such correspondence.

Requirement 46.6.1. (Grounds for a claim of shared material). *A claim that two practices share musical material is supported by correspondence in the relations constituting the material within each practice, and acoustic resemblance between realisations supports no such claim.*

The requirement bears directly upon the comparative chapters and upon Chapter 26, where the distinction between independent convergence and historical contact was assessed by criteria of just this kind.

46.7 Summary of Results

This chapter has established the following. The properties by which a musical entity is identified within a practice are supplied by the relations in which it stands, so that an entity removed from those relations retains its acoustic description and loses its musical identity. An unoccupied position is a constituent of a field where the practice supplies a determination against which its unoccupancy is registered, and a description recording only what sounded is incomplete. A musical entity persisting through alteration is identified by the ordered course of relations among its events, relative to the operations the practice admits, and its identity is incomplete while the course continues. The ontological position is inherited from process philosophy and from its established application to musical time, with the contribution confined to its comparative and historical application. Two forms of description are excluded, and a claim that two practices share material requires correspondence in the constituting relations.

Chapter 47

Historical, Musical and Experienced Temporality and the Question of Their Coupling

This chapter examines a claim that the framework of this book makes available and that the evidence assembled here supports only in part. Its role is to state the claim precisely, to distinguish the three temporalities it relates, to report what the material of Parts III and IV establishes about their coupling, and to record the component that remains unsupported. It undertakes to establish four things: that three temporal organisations may be distinguished and are not reducible to one another; that coupling between the musical and the experienced organisations is established; that coupling between the historical and the musical organisations is established in one direction and unsupported in the other; and that the strong form of the claim, on which the three are levels of a single structure, is unsupported by anything assembled here. It proceeds in five sections.

47.1 The Three Temporal Organisations Distinguished

This section fixes the three terms. Its objective is to define each and to establish that none is reducible to the others. It proceeds by defining them and stating the irreducibility.

Definition 47.1.1. (Musical temporality). *The musical temporality of a practice is the temporal organisation of its sounding material, described in the terms of Chapter 6 and classified by the regimes of Chapter 45.*

Definition 47.1.2. (Experienced temporality). *The experienced temporality of a participant is the organisation of that participant's temporal experience while within a musical field, comprising the retention, anticipation and placement described in Chapter 45.*

Definition 47.1.3. (Historical temporality). *The historical temporality of a period is the organisation of temporal relations within which a community stands to its past and its future, including its account of its own origin, its treatment of inheritance, and the horizons over which it plans.*

The three are irreducible to one another. Musical temporality is a property of material and is describable from a score, a recording or a transcription without any participant. Experienced temporality is a property of participants and varies among them within a single

performance. Historical temporality is a property of a community over a period and is documented by sources having nothing to do with music.

47.2 Coupling Between Musical and Experienced Organisation

This section reports the coupling for which evidence exists. Its objective is to state what is established and by what evidence.

The coupling between musical and experienced temporality is established in the literature reported in Chapter 45 and is not contested here. A participant within a referenced field anticipates continuations at positions determined by the field; a participant within an unreferenced field forms expectations of a different character. The organisation of the material bears upon the organisation of the experience.

Claim 47.2.1. (Establishment of the musical-experiential coupling). *The temporal organisation of musical material bears upon the temporal organisation of the experience of competent participants, and the bearing is established by the experimental and analytical literature on musical expectation.*

Two limits attach and are recorded. The literature establishing the coupling has been conducted predominantly with participants competent in one family of practices, and its extension to participants competent in others requires demonstration. And the coupling is established for expectation and for the perception of grouping, with the wider claims about the character of temporal experience resting on report.

47.3 Coupling Between Historical and Musical Organisation

This section reports the coupling in the second pair. Its objective is to state what the material of this book establishes and in which direction. It proceeds by treating each direction.

In one direction the coupling is established, and it is the direction Part IV treats. The material, economic and institutional conditions obtaining within a period bear upon the musical organisations available to it, in the manner fixed by Chapter 10: a constituent of the field changes, and a configuration passes from excluded to admitted. Where the conditions concern time directly, the bearing is on temporal organisation specifically. The duration of an occasion, the availability of participants for rehearsal, and the horizon over which an institution provisions a practice are all conditions bearing upon what temporal organisations a practice may sustain.

Claim 47.3.1. (Establishment of the conditional coupling in one direction). *The material and institutional conditions of a period bear upon the temporal organisations available to its musical practices, through the admission and exclusion of configurations fixed in Chapter 10.*

In the other direction the coupling is unsupported by anything assembled here. The claim in that direction would hold that a community's musical temporality bears upon its historical

temporality, so that the organisation of its music enters the organisation of its relation to its own past and future. Part VII treats the general question of propagation from musical practice to other systems and states the evidence that would be required. Nothing in Parts III to V supplies it.

47.4 The Strong Claim and Its Standing

This section treats the claim that the framework makes available. Its objective is to state the strong claim, to distinguish it from what has been established, and to record its standing. It proceeds accordingly.

Hypothesis 47.4.1. (Coupling of the three temporalities). *The historical temporality of a community, the musical temporality of its practices and the experienced temporality of its participants constitute three levels of one structure, such that a determination at any level bears upon the others.*

The hypothesis is attractive within this framework, since the framework describes each level in relational terms and thereby makes a common description available. The attraction is a reason for caution.

Three components of the hypothesis may be assessed separately. The musical-experiential coupling is established, as Section 2 reports. The historical-to-musical coupling is established in the conditional form of Section 3. The remaining components, namely the musical-to-historical coupling and the direct coupling of historical to experienced temporality, are unsupported here.

Claim 47.4.2. (Partial support of the coupling hypothesis). *Of the couplings asserted by the hypothesis, one is established by existing literature and one is established in a conditional form by the material of this book, while the couplings running from musical organisation toward historical organisation are unsupported by anything assembled here.*

The consequence is that the hypothesis is retained as a hypothesis, and the language of levels of a single structure is withheld from the descriptions of the book. Where a correspondence between a period's musical temporality and its historical temporality is noted in Part IV, it is reported as a correspondence and the question of its ground is left open.

47.5 Conditions That Would Support the Unsupported Components

This section states what would be required. Its objective is to specify the evidence that would support the components Section 4 reports as unsupported, so that the hypothesis is testable and carries a stated route to its own assessment.

Two forms of evidence are specified.

The first would establish that a change in a community's musical temporality preceded a change in its historical temporality, with the two independently dated, and that no third

condition accounts for both. The requirement of independent dating is the demanding one, and Part IV records the difficulty of dating changes in musical organisation with the precision such an argument requires.

The second would establish that participants trained within a practice of one temporal regime differ, in their handling of non-musical temporal tasks, from participants trained within another, with the difference attributable to the training. Evidence of this kind would bear on the coupling between musical and experienced temporality at a point where the experienced organisation extends beyond the musical occasion.

Requirement 47.5.1. (Standard for asserting the strong coupling). *An assertion that musical and historical temporality are coupled requires independently dated changes in each with alternative common causes excluded, and an assertion that musical training bears upon temporal experience beyond the musical occasion requires evidence attributing the difference to the training.*

47.6 Summary of Results

This chapter has established the following. Musical, experienced and historical temporality are three organisations, none reducible to the others, described respectively from material, from participants and from sources unrelated to music. The coupling between musical and experienced temporality is established by existing literature, with two limits recorded concerning the range of participants studied and the properties for which it is established. The coupling between historical conditions and musical temporality is established in the conditional form supplied by Chapter 10, running from conditions to available configurations. The couplings running from musical organisation toward historical organisation are unsupported by anything assembled in this book, and the hypothesis that the three constitute levels of one structure is accordingly retained as a hypothesis, with the language of levels withheld from the book's descriptions. Two forms of evidence that would support the unsupported components are specified.

Chapter 48

Participation Within a Sounding Field and the Modes of Presence It Admits

This chapter closes the second movement of the book's question. Its role is to state what may be said, within the framework of this book, about the mode of presence of a participant within a musical field, and to fix the limits of what such an account can establish. It undertakes to establish four things: that presence within a sounding field is describable in relational terms already fixed, without recourse to reports of experience; that participation admits of degrees which may be distinguished by stated criteria; that the termination of a sounding field raises a question about the mode of existence of what has ceased, and that the question receives a determinate answer in the terms of Chapter 46; and that the account contributes to a relational ontology of being a case with properties that other cases lack. It proceeds in five sections.

A restriction is stated at the head of the chapter. This book has no access to the experience of participants beyond their reports and their conduct, and it advances no claim about the character of such experience. The account given here is an account of positions within a field and of the relations constituting them.

48.1 Presence Described Relationally

This section states what presence within a field consists in, within the framework of this book. Its objective is to give a description in the terms already fixed, and to show that the description requires no appeal to reports of experience. It proceeds by giving the conditions and stating the consequence.

A party is present within a musical field, in the sense fixed by Chapter 10, where the party stands in relations of dependence with other constituents of the field. Three forms of such dependence may be distinguished.

Dependence upon obtains where what the party does is constrained by what other constituents do. A performer following a leading voice stands in this relation.

Dependence of obtains where what other constituents do is constrained by what the party does. A performer whose entry other performers await stands in this relation.

Registration obtains where the party's state alters in consequence of the field and the alter-

ation bears upon the party's subsequent action within it. An attending party whose attention is directed by the field, and whose subsequent attention is thereby altered, stands in this relation.

Claim 48.1.1. (Relational sufficiency of the description of presence). *Presence within a musical field is describable by the three forms of dependence, and the description requires no report of the character of a party's experience.*

The claim is a restriction as much as a result. It fixes what this book can say and withholds the wider account that a philosophical treatment of presence would supply.

48.2 Degrees of Participation

This section distinguishes degrees. Its objective is to supply criteria by which participation is graded, and to establish that the grades cut across the customary distinction between performing and attending. It proceeds by giving the criteria and the grades.

Two criteria are used: whether the party stands in relations of dependence-of as well as dependence-upon, and whether the party's registration bears upon the conduct of others.

Four grades follow. A party standing in neither relation is co-present without participating. A party standing in dependence-upon alone receives the field without bearing upon it. A party whose registration bears upon the conduct of others participates without producing sound: an attending body whose response alters what performers do stands in this grade. A party standing in dependence-of participates in the strong sense.

Claim 48.2.1. (Independence of participation from sound production). *The grade of a party's participation within a musical field is independent of whether the party produces sound, since a party producing no sound may stand in relations of dependence-of through the bearing of its registration upon the conduct of others.*

The claim is required by the material of Part III, where lay bodies attending ritual occasions were constituents of the fields described, and it is developed in Part VI, where the historical constitution of audiences is treated.

48.3 Termination and the Mode of Existence of What Has Ceased

This section treats the question raised by the ending of a performance. Its objective is to state the question and to give the answer available in the terms of Chapter 46. It proceeds accordingly.

The question is what becomes of a musical entity when the field within which it was constituted ceases. The question is pressing for the ontology of this book, since Chapter 46 located musical identity in relations obtaining within a practice.

The answer available is determinate and has three parts.

The relations constituting the entity obtained, and their having obtained is not subsequently alterable. The account of Chapter 46 attributes identity to a course of relations, and a completed course is a determinate object.

The entity is available to subsequent fields as material, through the operations under which the practice treats material as preserved. A subsequent performance realises the same material where the relations correspond in the sense fixed in Chapter 46.

The entity is unavailable as a constituent of any present field once the field has ceased, since the relations of dependence enumerated in Section 1 no longer obtain.

Claim 48.3.1. (Determinateness of a completed course). *A musical entity whose constituting course of relations is complete is a determinate object, available to subsequent fields as material under the operations a practice admits, and unavailable as a constituent of any present field.*

The claim resolves an apparent difficulty in the ontology and is worth stating for that reason. An account locating identity in relations within a practice appears to make past music vanish. It does not: the course obtained, and its having obtained is what subsequent practice takes up.

48.4 The Properties of the Musical Case

This section states what the musical case contributes to a relational account of presence generally. Its objective is to identify the properties this case possesses which other cases lack, and thereby to state the chapter's contribution. It proceeds by naming three properties.

The first property is *documented determinacy of the field*. The constituents of a musical field and the relations among them are documented to a degree unusual among the fields in which persons participate. Scores, prescriptions, recordings and the descriptions of Parts III and IV specify what depends upon what, with a precision that descriptions of social participation generally lack.

The second property is *bounded extent*. A musical field has a beginning and an ending, and the ending is generally determinate. A relational account of presence may therefore treat a complete case, which accounts of participation in fields of indefinite extent cannot.

The third property is *repeatability under variation*. A practice may be instantiated repeatedly with constituents varied, which supplies the material for the comparisons of Parts III and IV.

Claim 48.4.1. (Contribution of the musical case to a relational account of presence). *The musical case supplies a relational account of presence with a field whose constituents and dependences are documented, whose extent is bounded, and which may be instantiated repeatedly under variation, and these properties are unusual among the fields in which persons participate.*

48.5 The Limits of the Account

This section states what the chapter has not established. Its objective is to record the limits so that Part VI's treatment of subject formation is read against them.

Three limits are recorded.

The account describes positions within a field and the relations constituting them, and it supplies no account of the character of a participant's experience. Statements about such experience in this book are reports of what participants have said or of what their conduct exhibits.

The account concerns presence within a field and does not, by itself, establish anything about what a participant becomes through participation. Part VI treats that question and states separately the evidence bearing on it.

The properties of the musical case identified in Section 4 make it favourable for a relational account of presence, and its favourability limits the generality of any conclusion drawn from it. A field whose constituents are documented, whose extent is bounded and which repeats under variation is unrepresentative of the fields in which persons ordinarily participate, and the extension of results obtained here to those fields requires argument.

48.6 Summary of Results

This chapter has established the following. Presence within a musical field is describable by three forms of dependence, and the description requires no report of the character of a party's experience. Participation is graded by whether a party stands in dependence-of as well as dependence-upon, and the grade is independent of whether the party produces sound. A musical entity whose constituting course is complete is a determinate object, available to subsequent fields as material and unavailable as a constituent of any present field, which resolves the apparent difficulty that a relational ontology makes past music vanish. The musical case supplies a relational account of presence with a documented, bounded and repeatable field, and the same properties make it unrepresentative, so that extension of its results to other fields of participation requires argument.

Part VI

The Symbolic and the Formation of Subjects

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Chapter 49

The Symbolic Layer of Musical Practice and the Return of Structure Upon Meaning

This chapter opens the third movement of the book's question, concerning the formation of subjects within musical fields. Its role is to establish the layer at which that question is posed, namely the layer at which musical elements acquire meanings and those meanings acquire consequences. It undertakes to establish four things: that a musical element becomes symbolic within a practice by a process that may be characterised without appeal to convention alone; that the acquisition of symbolic weight by an element has consequences for what the practice may subsequently do with it; that the relation therefore runs in both directions, with musical structure constraining what a symbol may come to mean; and that the second direction is the one existing accounts leave untreated. It proceeds in five sections.

49.1 The Acquisition of Symbolic Weight by a Musical Element

This section states how a musical element comes to carry meaning within a practice. Its objective is to characterise the process and to distinguish it from the ascription of meaning by an analyst. It proceeds by giving three conditions and stating what their conjunction supplies.

Three conditions are distinguished, and their conjunction constitutes the acquisition of symbolic weight.

The first is *recurrent association*. An element recurs in company with a determinate occasion, a determinate text, a determinate action or a determinate party, across enough instances for participants to have encountered the association.

The second is *participant registration*. Participants treat the element as carrying the association, which is exhibited by their conduct: they act upon its occurrence, report the association, or dispute it.

The third is *consequence*. The association bears upon what is done. Where the element occurs, something follows that would not follow otherwise.

Definition 49.1.1. (Symbolic weight). *A musical element carries symbolic weight within a practice where it recurs in association with a determinate occasion, text, action or party, where participants treat it as carrying that association, and where its occurrence has consequences for what participants do.*

The definition excludes the ascription of meaning by an analyst who observes a recurrence unmarked by participants. It also excludes association without consequence: where an element is associated with an occasion and nothing follows from its occurrence, the third condition fails.

Claim 49.1.2. (Exhibition of symbolic weight through consequence). *The symbolic weight of a musical element is exhibited by the consequences of its occurrence for the conduct of participants, and a recurrent association carrying no such consequence supplies no evidence of symbolic weight.*

The claim applies to the symbolic layer the requirement of dependence fixed in Chapter 3, and it is the counterpart within this Part of the criterion of operation fixed in Chapter 4.

49.2 Load Bearing and Its Consequences for Practice

This section treats what follows when an element acquires symbolic weight. Its objective is to establish that such an element becomes constrained in ways it was not constrained before. It proceeds by stating the position, giving the constraints, and recording the evidence.

An element carrying symbolic weight is a load-bearing element of a practice: its occurrence is depended upon, and its alteration has consequences beyond the sounding.

Three constraints follow, and each was exhibited in the material of Part III.

Constraint upon alteration. Where an element carries symbolic weight, its alteration is resisted, since the alteration would disturb the association. Elements of a practice carrying no such weight are altered without resistance.

Constraint upon occasion. Where an element carries an association with a determinate occasion, its use on other occasions is restricted, since its occurrence would carry the association where the association does not hold.

Constraint upon party. Where an element is associated with a determinate position within a practice, its production by parties in other positions is restricted.

Claim 49.2.1. (Constraint of practice by symbolic weight). *An element carrying symbolic weight within a practice is constrained in its alteration, in the occasions of its use and in the parties who may produce it, and the constraints are exhibited by the resistance encountered where they are breached.*

49.3 The Return of Structure Upon Meaning

This section states the chapter's principal claim. Its objective is to establish that the musical structure within which a symbolic element sits constrains what the element may come to mean, and to give the mechanism. It proceeds by stating the claim, giving the mechanism, and identifying the evidence that would test it.

The claim is that the relation between musical structure and symbolic content runs in both

directions. That a symbolic content may bear upon musical structure is the familiar direction and is treated in Section 2. The claim here concerns the return.

The mechanism is as follows. An element within a musical practice occupies a position determined by the relations of Chapters 7 and 8: it follows certain material, prepares certain material, stands in certain relations to what sounds alongside it. Those relations are perceptible to participants independently of any association the element carries. A proposed meaning that conflicts with the perceptible position is unstable: participants encountering the element encounter its position, and a meaning at variance with the position is contradicted at each encounter.

Claim 49.3.1. (Structural constraint upon available meaning). *The position an element occupies within the relational organisation of a practice constrains the meanings the element may stably carry, since a meaning at variance with the perceptible position is contradicted at each occurrence.*

The claim requires two concessions before it can be stated as a contribution, and both concern positions considerably older than the semiotic accounts it is usually set against.

The first is European. The nineteenth-century treatise commonly read as denying that music has content in fact denies something narrower: that the representation of determinate feelings is music's subject matter. Its positive thesis is that music's content consists in sounding forms in motion, which is to say in the relations among musical elements themselves.¹

The second is Chinese and is earlier by some fourteen centuries. A third-century essay argues that sounds possess no intrinsic grief or joy, that these belong to the states a hearer brings, and that music therefore occasions their manifestation without containing them.²

Claim 49.3.2. (Independent statement of the distinction in two traditions). *The distinction between what a musical organisation contains and what a hearer brings to it was drawn within Chinese philosophical writing of the third century and within European aesthetic writing of the nineteenth, and the two statements are independent of one another.*

The claim is recorded for two reasons. It establishes that the distinction on which this chapter rests is neither a European invention nor a recent one. And it supplies an instance of the recurrence treated in Chapter 25: a distinction arrived at twice, in traditions without contact in the relevant respect, from the situation of attending to sounding organisation.

What the present claim adds to both is the direction of constraint. Neither antecedent asks how the position an element occupies within an organisation limits the meanings it may stably carry, and the semiotic accounts reported in Chapter 2 treat the first direction and leave the

¹Eduard Hanslick, *Vom Musikalisch-Schönen* (Leipzig, 1854); English editions, *On the Musically Beautiful*, trans. Geoffrey Payzant (Indianapolis: Hackett, 1986), and *Eduard Hanslick's On the Musically Beautiful: A New Translation*, trans. and ed. Lee Rothfarb and Christoph Landerer (New York: Oxford University Press, 2018). The rendering of Hanslick's phrase is itself disputed between these editions, the first favouring a tonal and the second an acoustic emphasis, and this book takes no position on the question.

²嵇康, 〈聲無哀樂論〉. Treatments of the essay and of early Chinese music thought include Kenneth J. DeWoskin, *A Song for One or Two: Music and the Concept of Art in Early China* (Ann Arbor: Center for Chinese Studies, University of Michigan, 1982), and Erica Fox Brindley, *Music, Cosmology, and the Politics of Harmony in Early China* (Albany: State University of New York Press, 2012).

second untreated.³ Semiotic accounts establish how musical elements come to signify; they supply no account of how the organisation constrains what may be signified.

The evidence that would test the claim is specified. It would consist in a documented case in which a meaning was ascribed to a musical element by an institution or a tradition, and in which the ascription failed to hold among participants, with the failure attributable to the element's structural position. Part IV treats one candidate in the history of programmatic ascription, and the outcome is reported there.

49.4 The Circulation of Weight Through a Practice

This section treats the movement of symbolic weight. Its objective is to establish that weight is neither fixed to an element nor freely reassignable, and to identify the conditions under which it moves. It proceeds by giving three processes.

Transfer occurs where an element's association passes to an element structurally adjacent to it, so that the second acquires the weight the first carried. The condition is that participants encounter the two in the same position.

Dilution occurs where an element carrying an association is used on occasions where the association does not hold, until the association fails the condition of consequence and the weight lapses.

Fixation occurs where an association is recorded in a normative text or enforced by an institution, after which its lapse requires the alteration of the text or the institution. Part III supplied instances in which liturgical books fixed associations between elements and occasions.

Claim 49.4.1. (Institutional dependence of the persistence of symbolic weight). *Symbolic weight that has been fixed in a normative text or enforced by an institution persists under conditions that would dilute an unfixed association, so that the persistence of a musical symbol depends upon the institutions maintaining it.*

The claim connects this Part to the selection mechanisms of Chapter 25, and it supplies the account of persistence that Part VII requires.

49.5 What This Chapter Does Not Establish

This section records the limits. Its objective is to state three things the chapter leaves open, so that the chapters following are read against them.

The chapter establishes conditions under which an element carries symbolic weight within a practice, and it supplies no account of why any particular association arises. The associations

³Jean-Jacques Nattiez, *Music and Discourse: Toward a Semiology of Music*, trans. Carolyn Abbate (Princeton: Princeton University Press, 1990), whose tripartition of the poietic, the neutral and the esthetic levels is the standard apparatus for the first direction.

documented in Part III were historical and their origins were, in most cases, undetermined by the sources.

The chapter treats meaning as exhibited by consequence for conduct, and it makes no claim about what participants experience in encountering a weighted element. Chapter 48 fixed the restriction and it holds here.

The claim of Section 3 is stated with the evidence that would test it, and the test is not performed in this chapter. Part IV reports one candidate case.

49.6 Summary of Results

This chapter has established the following. A musical element carries symbolic weight where it recurs in association with a determinate occasion, text, action or party, where participants treat it as carrying the association, and where its occurrence has consequences for conduct; association without consequence supplies no evidence of symbolic weight. An element carrying such weight is constrained in its alteration, its occasions and the parties who may produce it. The position an element occupies within the relational organisation of a practice constrains the meanings it may stably carry, which is the direction existing semiotic accounts leave untreated, and the evidence that would test the claim is specified. Symbolic weight moves by transfer, dilution and fixation, and weight fixed in a normative text or enforced by an institution persists under conditions that would dilute an unfixed association.

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Chapter 50

Ordering Without Signification and the Standing of a Pre-Symbolic Layer

This chapter treats the layer named in the book's subtitle. Its role is to establish that musical organisation exhibits ordering of a kind that carries no signification, and to state what follows for accounts of the symbolic that treat language as their model. It undertakes to establish four things: that ordering and signification are separable properties, and that musical organisation exhibits the first without the second; that a documented body of pre-linguistic interaction exhibits organisation of this kind; that the layer so identified is inherited from established work and is not a discovery of this book; and that its existence bears upon the accounts reported in Chapter 2 in a specifiable way. It proceeds in five sections.

A caution governs the chapter. The term standing in the subtitle of this book invites a stronger reading than the material supports, on which a pre-symbolic layer is foundational, originary or explanatory of what follows. No such reading is advanced. The layer is identified as a layer, its properties are stated, and its relation to the symbolic layer of Chapter 49 is left as the sequence of dependence the evidence supports.

50.1 The Separation of Ordering From Signification

This section establishes the separation. Its objective is to show that a system may be ordered, transmissible and learnable while carrying no signification, and to give the criteria by which each property is assessed. It proceeds by defining the properties and exhibiting their separation.

Definition 50.1.1. (Ordering). *A system is ordered where its elements stand in determinate relations of dependence, such that some successions and combinations occur and others are excluded, and where participants distinguish the admitted from the excluded.*

Definition 50.1.2. (Signification). *A system signifies where its elements stand for determinate contents distinct from themselves, such that a competent participant recovers the content from the element.*

The two properties are separable in both directions. A system may signify with little ordering, as a set of independent labels does. A system may exhibit extensive ordering without signifying.

Musical organisation supplies the second case. The relations of Chapters 6 to 8 are relations of dependence among elements: they determine which continuations are admitted, which combinations are stable, and which placements are available. Participants competent in a practice distinguish admitted from excluded material, and the distinction is exhibited by their conduct.

Claim 50.1.3. (Ordering without signification in musical organisation). *Musical organisation exhibits determinate relations of dependence which participants distinguish, without its elements standing for contents distinct from themselves, so that ordering obtains in the absence of signification.*

The claim is compatible with the material of Chapter 49. Elements of a practice may acquire symbolic weight, and the acquisition is a further fact about them. The ordering obtains among elements carrying no such weight.

50.2 Ordering in Pre-Linguistic Interaction

This section reports the documented case. Its objective is to identify the body of work establishing ordered interaction prior to language, and to state what it establishes. It proceeds by reporting the findings and fixing their standing.

A body of work has documented the interaction between infants and caregivers as exhibiting organisation of a specifiable kind: recurrent pulse in the exchange of vocalisation, contours of intensity and quality unfolding over units of exchange, and sequences of exchange organised over longer spans. The organisation is documented by acoustic analysis of recorded interaction, and the work has been developed under the designation of communicative musicality.

The findings are inherited here and are not defended. Their standing within this book is as follows: they establish that interaction organised in the manner of Section 1 occurs prior to the acquisition of language, which establishes that the ordering described in Section 1 is available to participants who do not yet signify.

Criticisms of the work are recorded in accordance with the practice fixed in Chapter 5. The concept has been criticised for generality, in that the term is applied at a level at which its content is difficult to fix; and the literature has been criticised for omitting a substantial developmental tradition bearing on the same interactions. Both criticisms are noted and neither is adjudicated here.

Claim 50.2.1. (Availability of ordering prior to signification). *Interaction exhibiting pulse, contour and sequential organisation is documented prior to the acquisition of language, which establishes that ordering of the kind described in Section 1 is available to participants who do not signify.*

50.3 The Standing of the Layer Within This Book

This section fixes what the layer is and is not. Its objective is to state the claim in the weakest form the evidence supports, and to declare three stronger readings that are declined. It proceeds accordingly.

The claim advanced is that a layer of ordering obtains which carries no signification, that musical organisation exhibits it, and that it is available to participants prior to language.

Three stronger readings are declined.

The first holds that the pre-symbolic layer is originary, in the sense that musical practice arises from it historically. The question of musical origins is treated agnostically in this book, for the reason given in Chapter 11, and nothing here bears upon it.

The second holds that the layer is foundational, in the sense that the symbolic layer of Chapter 49 is built upon it and derives its properties from it. Chapter 49 established that symbolic weight is acquired through recurrence, registration and consequence, and none of those processes was shown to depend upon the layer identified here.

The third holds that the layer is more authentic, immediate or valuable than the symbolic layer. The prohibition of the generative warrant fixed in Chapter 5 covers this reading, and the prohibition of developmental ordering covers the associated ranking.

Claim 50.3.1. (Coexistence without derivation). *The layer of ordering without signification and the layer of symbolic weight coexist within musical practices, and nothing established in this book shows either to be derived from the other.*

50.4 The Bearing Upon Accounts Modelled on Language

This section states the consequence for the accounts reported in Chapter 2. Its objective is to state the amendment proposed and to fix its scope. It proceeds by stating the account, the amendment and the scope.

Accounts of the symbolic order developed within the psychoanalytic tradition take language as their model, and treat the ordering of the symbolic as the ordering of a signifying system. What lies outside that ordering is characterised in those accounts by categories defined negatively with respect to it.

The material of Sections 1 and 2 bears upon such accounts in a specifiable way. It identifies a system that is ordered, transmissible, learnable and shared, and that does not signify. Such a system is accommodated by neither of the categories the accounts supply: it is not a signifying order, and it is not the unordered.

Claim 50.4.1. (Amendment to accounts modelled on the signifying order). *An account partitioning the field into a signifying order and what lies outside it accommodates no system that is ordered, transmissible and shared while carrying no signification, and musical organisation supplies such a system.*

The scope of the amendment is fixed. It concerns the partition, and it concerns nothing else in the accounts to which it applies. In particular it bears upon neither the account of the constitution of the subject treated in Chapter 51 nor the clinical or interpretive apparatus built upon those accounts, on which this book takes no position.

50.5 Consequences for the Chapters Following

This section states what the chapters following take from this one.

Chapter 51 treats the constitution of a party within a field, and takes from this chapter the availability of an ordered field to a party who does not signify within it. The availability matters there because it separates two conditions that accounts modelled on language hold together.

Chapter 54 treats what a participant acquires through participation, and takes from this chapter the distinction between acquiring the ordering of a practice and acquiring its symbolic associations, which are separately documented in the material of Part III.

Part VII treats propagation, and takes from this chapter the caution that a practice may transmit its ordering to another domain while transmitting none of its associations.

50.6 Summary of Results

This chapter has established the following. Ordering and signification are separable properties, and musical organisation exhibits determinate relations of dependence which participants distinguish while its elements stand for no contents distinct from themselves. Interaction exhibiting pulse, contour and sequential organisation is documented prior to the acquisition of language, which establishes that such ordering is available to participants who do not signify; the documenting literature is inherited here and its criticisms are recorded. The layer so identified coexists with the symbolic layer, and nothing established here shows either derived from the other; readings treating the pre-symbolic layer as originary, foundational or more authentic are declined. An account partitioning the field into a signifying order and what lies outside it accommodates no ordered, transmissible and shared system that carries no signification, and the amendment proposed is confined to that partition.

Chapter 51

The Position of Confirmation and the Question of Its Occupancy

This chapter treats the account of subject constitution that the third movement of the book's question engages. Its role is to state that account accurately, to identify what it establishes and what it leaves unexamined, and to state the amendment this book proposes together with the evidence that would bear upon it. It undertakes to establish four things: that the account distinguishes a position from whatever occupies it, and that the distinction is what makes the account testable; that the account supplies no history, so that the conditions under which such a position acquires organising force are left unexamined; that the amendment proposed here concerns those conditions and concerns nothing else; and that the amendment is testable by a stated procedure. It proceeds in five sections.

Two matters of procedure govern the chapter. The account engaged here belongs to a tradition with clinical and interpretive commitments on which this book takes no position, and the engagement is confined to the structural claim. The chapter advances a hypothesis and specifies its test, and it reports no result, since the test belongs to Chapter 52 and Chapter 53.

51.1 The Structural Claim and Its Terms

This section states the account. Its objective is to give the structural claim in a form in which its content is separable from the tradition's wider commitments. It proceeds by stating the claim and fixing its terms.

The claim holds that a party does not establish its own standing as a party. Standing is conferred from a position exterior to the party, from which the party is addressed, attended to, or held to account, and by reference to which the party is what it is within a field.

Two terms require separation, and their separation is what makes the account tractable.

Definition 51.1.1. (Position of confirmation). *A position of confirmation within a field is a position from which the standing of other parties is conferred, such that a party's place within the field is fixed by reference to it.*

Definition 51.1.2. (Occupant of the position). *The occupant of a position of confirmation is whatever in fact occupies it in a given field, which may be a party, an institution, a rule, a text or an assembly.*

The separation permits two questions to be asked separately. Whether a field possesses

such a position is one question. What occupies it is another. Accounts within the tradition have addressed the first and have treated the second historically, tracing a succession of occupants across periods.

Claim 51.1.3. (Separability of the position from its occupant). *The question whether a field possesses a position of confirmation is separable from the question of what occupies it, and the separation permits the second to be treated as a historical and comparative question.*

51.2 What the Account Establishes

This section states what the account supplies. Its objective is to identify its explanatory yield, since a chapter proposing an amendment must first state what it is amending.

The account supplies an explanation of a phenomenon that resists explanation otherwise: the persistence of a party's attachment to a field under conditions adverse to that party. Where standing is conferred from a position within a field, departure from the field is departure from the standing, and the cost of departure is accordingly greater than an accounting of the party's interests within the field would suggest.

The account further supplies an explanation of succession. Where a position of confirmation ceases to be occupied by what previously occupied it, the position does not thereby lapse, and a further occupant is found. The pattern has been traced across historical material within the tradition and within the study of religion.

Claim 51.2.1. (Explanatory yield of the account). *The account explains the persistence of attachment to a field under adverse conditions, and explains the succession of occupants where an occupant lapses, and no account confining itself to the interests of parties within a field supplies either explanation.*

The claim is stated because the amendment of Section 4 requires the account and does not replace it. An amendment that dispensed with the account would lose these two explanations.

51.3 What the Account Leaves Unexamined

This section identifies the gap. Its objective is to state precisely what the account does not supply, and to establish that the omission is structural in origin. It proceeds by stating the omission and giving its consequence.

The account treats the position of confirmation as a structural feature. It supplies no account of the conditions under which such a position acquires organising force within a particular field, nor of the conditions under which its force varies.

The omission is structural. An account holding a feature to be a condition of subjecthood as such has no place for the question of when and where the feature operates strongly, since it operates always.

Claim 51.3.1. (Absence of a conditional account). *The account supplies no conditions under which a position of confirmation acquires or loses organising force within a field, and the absence follows from its treatment of the position as a condition of subjecthood as such.*

The consequence is that the account cannot be tested against variation. Where a feature is held to obtain universally, fields differing in the force the position exerts are indistinguishable within the account, and the differences require explanation from elsewhere.

51.4 The Amendment and Its Content

This section states the amendment. Its objective is to state it in a form in which it is testable, and to fix its scope. It proceeds by stating the hypothesis, giving its motivation, and fixing what it does not assert.

Hypothesis 51.4.1. (Conditional force of the position of confirmation). *The organising force exerted by a position of confirmation within a field varies with the availability of confirmation from other parties within that field, such that the position exerts greater force where parties are unable to confer standing upon one another and lesser force where they are able.*

The motivation is as follows. Where standing may be conferred only from a single position, standing is a scarce good and parties compete for it. Where parties confer standing reciprocally, standing is not scarce in the same manner, and the single position's force is correspondingly reduced.

Three things the hypothesis does not assert are stated, since each would be read into it otherwise.

It does not assert that the position may be vacated. The account of Section 2 explains succession, and the hypothesis concerns the force the position exerts and leaves the question of vacancy untouched.

It does not assert that reciprocal confirmation is preferable. The prohibition of the generative warrant fixed in Chapter 5 covers the evaluative claim, and this book advances none.

It does not assert that this book's own primitive occupies the position. A framework whose central term is relation, proposing that relation occupies the position that divinity and the symbolic order have occupied, would commit the error it exists to describe.

51.5 The Procedure by Which the Amendment Is Tested

This section states the test. Its objective is to specify what would support and what would defeat the hypothesis, and to identify where the test is performed. It proceeds by giving the design and naming the chapters.

The hypothesis asserts covariation between two quantities: the force a position of confirmation exerts within a field, and the availability of reciprocal confirmation among parties within it. A test requires that both be assessed independently.

The second is assessable within the framework of this book. Chapter 48 supplied the forms of dependence by which parties stand within a field, and the availability of reciprocal confirmation is assessable by whether parties stand in relations of dependence-of with respect to one another, or only with respect to a single position.

The first is assessable by the conduct that Chapter 49 took as the exhibition of symbolic weight: what follows from the occupant's presence, its absence, and its alteration.

Requirement 51.5.1. (Design of the test). *The hypothesis is tested by comparing fields differing in whether parties stand in relations of dependence-of with respect to one another, holding constant so far as possible the material and institutional conditions, and by assessing in each the consequences of the occupant's presence, absence and alteration.*

Musical fields are favourable for the test for the reasons given in Chapter 48: their constituents and dependences are documented, their extent is bounded, and they are instantiated repeatedly under variation. They supply, in addition, fields of both kinds. Chapter 52 identifies what occupies the position in the fields described in Parts III and IV, and Chapter 53 performs the comparison.

The result is not anticipated here. Chapter 53 reports what the comparison yields, including the possibility that it yields nothing decisive, and the standing of the hypothesis at the close of Part VI is stated there.

51.6 Summary of Results

This chapter has established the following. The account engaged here distinguishes a position of confirmation from whatever occupies it, and the separation permits the question of occupancy to be treated historically and comparatively. The account supplies two explanations that accounts confining themselves to parties' interests do not supply: the persistence of attachment under adverse conditions, and the succession of occupants where an occupant lapses. It supplies no conditions under which such a position acquires or loses organising force, and the absence follows from its treatment of the position as a condition of subjecthood as such, with the consequence that it cannot be tested against variation. The amendment proposed is a hypothesis of conditional force, which asserts covariation with the availability of reciprocal confirmation among parties, and which asserts neither that the position may be vacated, nor that reciprocal confirmation is preferable, nor that this book's own primitive occupies the position. The test is specified and is performed in Chapters 52 and 53.

Chapter 52

Occupancy of the Position of Confirmation in Documented Musical Fields

This chapter performs the first half of the test specified in Chapter 51. Its role is to identify what occupies the position of confirmation within the musical fields described in Parts III and IV, and to establish that the occupancy is determinable from the documentation. It undertakes to establish four things: that the position is identifiable within a musical field by a stated procedure; that the occupants so identified differ across the fields documented; that a body of literature locates the relevant phenomenon in the voice, and that this book enters by another route with reasons; and that the identification supplies the material on which Chapter 53 performs the comparison. It proceeds in five sections.

52.1 The Procedure for Identifying the Occupant

This section states the procedure. Its objective is to give a determinate method for identifying what occupies the position within a documented field. It proceeds by giving three tests and stating their conjunction.

The position of confirmation was defined in Chapter 51 as a position from which the standing of parties is conferred. Within a musical field, standing is a party's place within the practice: whether the party is a participant, in which grade, and whether the party's contribution counts as a contribution.

Three tests identify the occupant.

The *test of adjudication* asks from what position it is settled whether a party's contribution counts. Where a contribution may be rejected, the position from which it is rejected is a candidate.

The *test of address* asks toward what the parties orient their action. Where performers direct their delivery toward a position, the position is a candidate.

The *test of consequence* asks what follows from the occupant's absence. Where the absence of a candidate alters the conduct of the parties, the candidacy is supported; where the absence alters nothing, it fails.

Requirement 52.1.1. (Identification of the occupant). *The occupant of the position of confirma-*

tion within a musical field is identified by the position from which contributions are adjudicated, toward which action is oriented, and whose absence alters the conduct of parties, and a candidate satisfying none of the three is rejected.

The third test carries the weight, for the reason given in Chapter 3: a relation is exhibited by what changes when its terms change.

52.2 Occupancy in the Ritual Fields of Part III

This section applies the procedure to the material of Part III. Its objective is to report what occupies the position in the fields there described, and to record the variation. It proceeds by treating the fields in groups.

In the fields of Chapters 14 and 15, the tests identify a differentiated occupancy. Adjudication of whether the sounding is proceeding correctly rests with the officiants holding the designated positions, and the test of consequence supports the identification, since the absence of the officiant holding the pacing function alters the conduct of the assembly directly. The orientation of action, by contrast, is toward the addressee of the rite, and the tradition's own account places the adjudication of the rite's efficacy there.

The divergence between the tests is a finding and is recorded as such. Within these fields the position from which conduct is regulated and the position toward which conduct is oriented are distinct, and only the first satisfies the test of consequence as documented.

Claim 52.2.1. (Divergence of adjudication from orientation in ritual fields). *Within the ritual fields documented in Part III, the position from which the conduct of parties is adjudicated and the position toward which their action is oriented are distinct, and the documentation supports the identification of the first by the test of consequence and supplies no comparable support for the second.*

The claim is stated carefully. It reports what the documentation supports and asserts nothing about the tradition's own account, which is reported in the seventh section of each tradition chapter and is not adjudicated.

In the field of Chapter 16, the tests identify the line of instruction. Adjudication of correct delivery rests with the teacher and the school; the test of consequence is satisfied, since Chapter 16 established that participants drawn from divergent lines of instruction cannot coordinate.

In the field of Chapter 21, the tests identify the text together with its notational apparatus. Adjudication of correct delivery rests upon the accents, and the test of consequence is satisfied, since an alteration of the accents alters the delivery at the level of the word.

52.3 Occupancy in the Performance Fields of Part IV

This section applies the procedure to the historical material. Its objective is to report what occupies the position in the performance fields treated in Part IV, and to identify the transfor-

mation that Part IV documents.

Within the fields of the earlier periods treated in Part IV, the tests identify a position held by a performing party: the party from whose delivery the others take their placement, and whose contribution the others follow. Adjudication is exercised from within the performing body.

Within the fields of the later periods, the tests identify a different arrangement. Adjudication of whether the delivery is proceeding correctly is exercised from a position outside the sounding body, held by a party producing no sound, and the test of consequence is satisfied directly.

Claim 52.3.1. (Historical transformation in the occupancy of the position). *The fields documented in Part IV exhibit a transformation in which adjudication passed from a position within the sounding body to a position outside it, held by a party producing no sound.*

The claim is stated here and its evidence is supplied in Part IV, where the emergence of the arrangement is documented and dated. Its significance for the present Part is that it supplies a case in which the occupancy of the position changed while the practice continued, which is the variation Chapter 51 required for a test.

A second occupant is identified in the later fields and is recorded separately. Where a notated specification determines what parties are to deliver, adjudication of whether a delivery is correct is exercised by reference to the specification. The specification is accordingly a candidate occupant, and it satisfies the test of consequence.

52.4 The Route Taken Into the Territory

This section states the relation between this chapter and an existing literature. Its objective is to identify that literature, to state why this book enters by another route, and to record what is thereby forgone. It proceeds accordingly.

A body of work within the psychoanalytic tradition locates the phenomena of this Part in the voice, treating the singing voice as an object around which the constitution of the subject is organised, and has developed the account at length with reference to opera.

This book enters by another route, treating relational structure and its documented variation. Two reasons are given.

The first is that the account by way of the voice is developed and occupied, and a contribution entering there would be a contribution to an existing discussion on its own terms.

The second is that the amendment proposed in Chapter 51 concerns conditional variation in the force of a position, and the material that bears upon it is comparative and historical. The route through relational structure reaches that material and the route through the voice does not.

Claim 52.4.1. (Forgone content of the alternative route). *The route taken here supplies no ac-*

count of the voice as an object of attachment, which the alternative route supplies, and the omission is a cost of the entry chosen.

The claim is recorded so that the omission is visible. A reader seeking an account of the voice in the sense developed in that literature will find none here.

52.5 The Material Assembled for the Comparison

This section states what this chapter delivers to the next. Its objective is to identify the fields that the comparison of Chapter 53 will use, and to state the property by which they are sorted.

Four classes of field have been identified.

Fields in which adjudication is exercised from a single position external to the sounding body, identified in the later material of Part IV.

Fields in which adjudication is exercised from a designated position within the sounding body, identified in the ritual fields of Chapters 14 and 15 and in the earlier material of Part IV.

Fields in which adjudication is exercised by reference to a text or specification, identified in Chapters 21 and 23 and in the later material of Part IV.

Fields in which adjudication is distributed among the parties through their common acquisition, identified in Chapters 16, 19 and 20.

Claim 52.5.1. (Availability of fields of contrasting occupancy). *The material of Parts III and IV supplies fields in which the position of confirmation is occupied singly and externally, singly and internally, textually, and distributedly, which satisfies the requirement of Chapter 51 that fields differing in the relevant respect be available for comparison.*

52.6 Summary of Results

This chapter has established the following. The occupant of the position of confirmation within a musical field is identified by three tests, of which the test of consequence carries the weight. Within the ritual fields of Part III the position from which conduct is adjudicated and the position toward which action is oriented are distinct, and only the first is supported by the test of consequence as documented; in other fields of Part III the tests identify the line of instruction and the text with its notational apparatus. The fields of Part IV exhibit a transformation in which adjudication passed from a position within the sounding body to a position outside it held by a party producing no sound, with a notated specification identified as a second occupant. This book enters the territory through relational structure and forgoes the account of the voice developed in an existing literature, and the omission is recorded. Four classes of field with contrasting occupancy are assembled for the comparison of Chapter 53.

Chapter 53

Concentrated and Distributed Confirmation and the Assessment of the Conditional Hypothesis

This chapter performs the comparison designed in Chapter 51 upon the material assembled in Chapter 52. Its role is to report what that comparison yields and to state the standing of the conditional hypothesis at the close of the assessment. It undertakes to establish four things: that the comparison as designed cannot be performed upon the assembled material, for a stated reason; that a smaller class of cases permits a partial assessment, and that the class is identified; that those cases exhibit a substitution of one coordinating arrangement for another when an occupant is removed, which bears upon the hypothesis in a specifiable way; and that the hypothesis's directional claim remains untested, with the obstacle named. It proceeds in five sections.

The result reported here is partial, and the chapter states so at its head so that the sections following are read as an assessment and not as a demonstration.

53.1 The Obstacle to the Comparison as Designed

This section states why the designed comparison fails. Its objective is to identify the requirement it cannot meet and to establish that the failure is structural. It proceeds by restating the design, identifying the requirement, and stating the failure.

Chapter 51 required that two quantities be assessed independently: the force exerted by a position of confirmation within a field, and the availability of reciprocal confirmation among parties within it. Chapter 52 supplied a procedure for identifying the occupant, in which the test of consequence carried the weight: the occupant is identified by what follows from its absence.

The requirement the assembled material cannot meet is the variation of the occupant. Assessing the force a position exerts requires observation of the field with the occupant present and with the occupant absent, and in the fields documented in Parts III and IV the occupant is not varied. A tradition maintaining a designated officiant maintains it throughout; a practice adjudicated by a notated text is adjudicated by it throughout.

Claim 53.1.1. (Structural obstacle to the assessment of force). *The force exerted by a position*

of confirmation within a field is assessed by the consequences of the occupant's absence, and in the fields documented in this book the occupant is present throughout, so that the quantity the hypothesis concerns is unobserved across the assembled material.

The failure is structural in the sense that it follows from the character of the material and not from a deficiency in its documentation. A practice within which the adjudicating position were sometimes vacant would be an unusual practice, and its absence from the record is what the record should be expected to show.

Comparison across fields supplies no substitute, for the reason recorded in Chapter 25 concerning confounded variables. The four classes assembled in Chapter 52 differ in the size of the sounding body, its spatial extent, whether delivery is collective, the presence of a notated specification, and the period and place of documentation. A difference in the force exerted by the position, were one observed across the classes, would be attributable to any of these.

53.2 The Class of Cases Permitting a Partial Assessment

This section identifies what may be assessed. Its objective is to define the class of cases in which an occupant was removed while a practice continued, and to establish that such cases exist. It proceeds by stating the requirement, giving the class, and recording its size.

The requirement is that a practice continue across the removal or interruption of the occupant, so that the same practice is observable in both conditions.

Three kinds of case meet it.

The first is the deliberate removal of an adjudicating position from an ensemble practice that had employed one. Ensembles constituted to perform without the adjudicating position that comparable ensembles employ have existed in the twentieth century and exist at present, and their working arrangements are documented.¹

The second is the interruption of a line of instruction in a practice coordinated by common acquisition. Chapter 16 established that such practices depend upon a shared line of instruction, and recorded that interruptions have occurred and that school traditions have been lost.

The third is the introduction of an adjudicating position into a practice that had lacked one. Part IV documents the historical case.

The class is small, and its smallness is recorded as a limit on everything the chapter concludes.

¹The clearest instances are conductorless orchestras. Persimfans, the First Symphony Ensemble without Conductor, was founded at Moscow in 1922 by the violinist Lev Tseitlin and performed until its dissolution in the early 1930s; the contemporary account of its working method and its rehearsal requirement is Leonid Sabaneev and S. W. Pring, "A Conductorless Orchestra," *The Musical Times* 69, no. 1022 (1928): 307–309. The continuing case is the Orpheus Chamber Orchestra, founded at New York in 1972 by the cellist Julian Fifer, whose working method is described in Harvey Seifter and Peter Economy, *Leadership Ensemble: Lessons in Collaborative Management from the World's Only Conductorless Orchestra* (New York: Times Books, 2001).

53.3 The Substitution Observed Upon Removal

This section reports what the first kind of case exhibits. Its objective is to state the observed arrangement and to identify the substitution it involves. It proceeds by reporting the arrangement, naming the substitution, and stating its relation to the hypothesis.

Ensembles performing without an adjudicating position adopt arrangements that may be described in the terms of Chapter 6 and Chapter 48. Two features are reported consistently in accounts of such ensembles.

The first is an increase in relations of dependence among the performing parties. Parties attend to one another where they would otherwise attend to the adjudicating position, and the leading function passes among them.

The second is an increase in preparation. Such ensembles report requiring more rehearsal for comparable material than ensembles employing an adjudicating position.

Claim 53.3.1. (Substitution of acquired for referenced coordination upon removal of an adjudicating position). *Ensembles performing without an adjudicating position exhibit increased dependence among performing parties together with increased preparation, which constitutes a substitution of acquired coordination in the sense of Chapter 6 for coordination referenced to a position.*

The relation of the observation to the hypothesis is stated exactly, since the observation is easily read as supporting more than it does.

The observation supports the claim that the two arrangements are substitutable, which the hypothesis presupposes. Where the arrangements were not substitutable, removal of the occupant would end the practice, and the hypothesis of conditional force would have no application.

The observation does not establish the direction the hypothesis asserts. The hypothesis holds that the position exerts greater force where reciprocal confirmation is unavailable. Establishing it requires that the force be measured independently of the substitution, and the cases report the substitution and supply no independent measure.

53.4 The Scale Condition and What It Suggests

This section reports a second feature of the cases and states what it bears upon. Its objective is to identify the condition under which the substitution is reported to hold and to state its consequence for the hypothesis. It proceeds accordingly.

The cases of Section 3 are predominantly of moderate size. Ensembles performing without an adjudicating position are, in the documented instances, smaller than the ensembles for which the adjudicating position is standard, and accounts of the larger historical instance report substantial rehearsal cost.

Two readings of the pattern are available and the chapter adjudicates neither.

On the first reading, the substitution is available at any scale and its cost rises with the

number of parties, so that the adjudicating position is an economy adopted where the cost of the alternative becomes prohibitive. On this reading the position's force follows from the resources available to a practice.

On the second reading, the substitution fails beyond a scale, since acquired coordination requires that each party attend to the others and the attention available to a party is bounded. On this reading the position's force follows from a limit on what parties can do.

Claim 53.4.1. (Two readings of the scale condition). *The reported concentration of substitution cases at moderate scale admits a reading on which the cost of acquired coordination rises with the number of parties and a reading on which acquired coordination fails beyond a bound, and the cases assembled here distinguish neither.*

Distinguishing them would require the rehearsal cost of acquired coordination to be measured against the number of parties, which is a quantity the ensemble-coordination literature could supply and which the present author has not found supplied.

53.5 The Standing of the Hypothesis at the Close of the Assessment

This section states where the hypothesis stands. Its objective is to report the outcome without overstatement and to identify what would advance the question. It proceeds by stating the outcome, its components, and the further evidence required.

The hypothesis of conditional force stated in Chapter 51 is untested by this book. Its presupposition is supported: the two coordinating arrangements are substitutable, and a practice may continue across the removal of an adjudicating position. Its directional claim, that the position's force varies inversely with the availability of reciprocal confirmation, is unassessed, since the force was not measured independently of the substitution.

Claim 53.5.1. (Outcome of the assessment). *The presupposition of the conditional hypothesis is supported by cases in which a practice continued across the removal of an adjudicating position, and the hypothesis's directional claim is unassessed by anything in this book.*

Two forms of further evidence would advance the question, and both are specifiable.

The first would measure the force exerted by an occupant independently of the coordinating arrangement, by observing what follows from the occupant's presence for matters other than coordination: whether a party's contribution is accepted, whether a party's standing within the practice is altered, whether disputes are settled by reference to the occupant. Such observation is available in principle for ensembles of both kinds.

The second would supply the quantity identified in Section 4, relating the cost of acquired coordination to the number of parties, which would distinguish the two readings of the scale condition.

A final observation is recorded, and its subject is the framework itself. The assessment failed because the quantity at issue is unobserved in practices that maintain their arrange-

ments unchanged. The framework of this book describes fields as they are constituted and supplies no procedure for observing a field under a constituent's removal, beyond the cases where history has performed the removal. The limitation is recorded here and is returned to in the final chapter.

53.6 Summary of Results

This chapter has established the following. The comparison designed in Chapter 51 cannot be performed upon the material assembled in Chapter 52, because assessing the force a position exerts requires observation of the field with the occupant absent and the occupant is present throughout the documented fields; comparison across fields supplies no substitute, since the classes differ in many respects at once. Three kinds of case permit a partial assessment, of which ensembles performing without an adjudicating position are the clearest. Such ensembles exhibit increased dependence among performing parties together with increased preparation, which constitutes a substitution of acquired coordination for coordination referenced to a position, and which supports the hypothesis's presupposition while leaving its directional claim unassessed. The concentration of such cases at moderate scale admits two readings that the assembled cases do not distinguish. The hypothesis of conditional force is accordingly untested by this book, and two forms of evidence that would advance the question are specified.

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Chapter 54

Acquisition Through Participation and the Alteration of Relational Capacity

This chapter treats the third movement of the book's question directly. Its role is to state what a party acquires through participation in a musical field, in terms the book can support, and to identify the criterion by which such acquisitions are assessed. It undertakes to establish four things: that what a party acquires is stated as an alteration in the dependences the party can enter, which is assessable without appeal to reports of experience; that the ordering of a practice and its symbolic associations are separately acquired, and that the material of Part III documents the separation; that acquisition is bounded by the practice acquired, so that a party trained within one practice is thereby constrained with respect to others; and that the criterion distinguishing acquisitions is whether the party retains the capacity to revise what has been acquired. It proceeds in five sections.

54.1 Acquisition Stated as Alteration in Available Dependence

This section states what is claimed. Its objective is to give the form of the claim and to establish that it is assessable within the restriction fixed in Chapter 48. It proceeds by stating the form, giving the assessment, and recording what the form withholds.

Chapter 48 restricted this book to the description of positions within a field and the relations constituting them, and withheld claims about the character of participants' experience. The claim of this chapter is stated within that restriction.

Definition 54.1.1. (Relational capacity). *The relational capacity of a party with respect to a practice is the set of dependences the party is able to enter within fields of that practice, comprising the dependences upon others the party can sustain and the dependences of others upon the party that the party can support.*

Claim 54.1.2. (Alteration of relational capacity through participation). *Participation in a musical field alters the relational capacity of a party with respect to the practice, and the alteration is exhibited by dependences the party sustains after participation which the party could not sustain before.*

The assessment is by conduct. A party who can enter into acquired coordination with a

body of singers, having previously been unable to, has undergone an alteration of the kind the claim asserts, and the alteration is exhibited without any report of what the party experiences.

What the form withholds is stated. The claim concerns capacities and asserts nothing about what a party becomes in any wider sense, nor about the party's self-understanding. Such matters lie beyond the evidence this book commands.

54.2 Separate Acquisition of Ordering and of Association

This section establishes a distinction. Its objective is to show that the ordering of a practice and the symbolic associations of its elements are acquired separately, and to identify the material documenting the separation. It proceeds accordingly.

Chapter 50 distinguished ordering from signification and established their separability as properties of a system. The present section establishes their separability as objects of acquisition.

The material of Part III documents the separation in two directions.

A party may acquire the ordering of a practice without its associations. Participants in liturgical practices are documented delivering material whose associations they do not hold, including participants attending occasions of a tradition other than their own, and their delivery is coordinated with the rest.

A party may hold the associations of a practice without acquiring its ordering. The articulated commitments reported in the seventh section of each tradition chapter of Part III are held by parties throughout a community, and the capacity to deliver the practice's material belongs to those trained in it.

Claim 54.2.1. (Separability of the two acquisitions). *The ordering of a practice and the symbolic associations of its elements are separately acquired, so that a party may hold either without the other.*

The claim carries a consequence for Part VII. Where a practice propagates its ordering into another domain, the propagation of its associations is a separate question, and evidence for the one supplies no evidence for the other.

54.3 The Boundedness of What Is Acquired

This section states a limit upon acquisition. Its objective is to establish that acquisition within one practice constrains a party with respect to others, and to give the mechanism. It proceeds by stating the claim, giving the evidence, and recording the consequence.

Claim 54.3.1. (Practice-boundedness of acquired capacity). *Relational capacity acquired within a practice is capacity with respect to that practice, and a party's acquisition within one practice may constrain the dependences the party can enter within another.*

The evidence is that of Chapter 16, stated there as a property of coordination and restated

here as a property of parties. Where coordination proceeds by common acquisition, parties trained in divergent lines are unable to coordinate. The inability is a consequence of what each has acquired: each has acquired placements that the other has not.

A second body of evidence is available from the material of Part III concerning traditions maintaining distinct realisations. A party trained in one realisation delivers that realisation, and delivery of another requires further acquisition.

The consequence recorded is that acquisition is not accumulation without cost. A party who has acquired a practice has acquired determinate placements, and determinate placements exclude others.

54.4 Repetition, Frequency and the Maintenance of Capacity

This section treats the temporal structure of acquisition. Its objective is to identify the features of the practices documented in Part III that bear upon acquisition, and to state what follows.

Three features recur across the traditions of Part III.

Acquisition proceeds by participation in the practice itself, and the practices documented supply no separate training in which the material is acquired apart from its use.

Acquisition proceeds over long spans, with the traditions documenting periods of years between a party's first participation and the party's eligibility for the positions carrying adjudicative function.

Acquisition proceeds by frequent repetition, and the practices documented recur at short intervals, the daily office of Chapter 15 being the limiting case.

Claim 54.4.1. (Maintenance as a condition of acquired capacity). *The practices documented in Part III sustain acquired relational capacity by frequent repeated participation, and the traditions themselves record the loss of capacity where the repetition lapses.*

The claim connects acquisition to the institutional material of Chapter 25. A capacity maintained by repetition depends upon the institution supplying the occasions of repetition, and the loss of school traditions recorded in Chapter 16 is the documented consequence of that dependence.

54.5 The Criterion of Revisability

This section supplies the criterion by which acquisitions are distinguished. Its objective is to state the criterion, to establish that it is non-evaluative in the required sense, and to record what it permits the book to say. It proceeds accordingly.

Every practice alters the relational capacity of those who participate in it, and the alteration is what participation consists in. A criterion distinguishing among acquisitions cannot therefore be whether an alteration occurred.

Definition 54.5.1. (Revisable acquisition). *An acquisition is revisable where the party retains the capacity to enter dependences the acquisition did not supply, including dependences within other practices and dependences that would alter the acquired practice itself.*

Definition 54.5.2. (Closed acquisition). *An acquisition is closed where the party's capacity to enter dependences is confined to those the acquisition supplied, so that further acquisition requires the loss of what was acquired.*

Claim 54.5.3. (Availability of the criterion within the framework). *The distinction between revisable and closed acquisition is assessable by the dependences a party is able to enter after acquisition, and requires no assessment of the content of what was acquired.*

The criterion is non-evaluative in the sense fixed in Chapter 3: it records a property of the acquisition and supplies no assessment of it. A closed acquisition may be sought by a party and may be a condition of a practice's continuation.

What the criterion permits the book to say is stated. Practices may be compared by whether the acquisitions they require are revisable, and the comparison is available from the material of Part III, where traditions differ in whether a party trained in one realisation may subsequently acquire another. The comparison is not performed here, for want of documentation bearing on it, and is recorded as an outstanding item.

54.6 Summary of Results

This chapter has established the following. What a party acquires through participation is stated as an alteration in relational capacity, exhibited by dependences the party sustains after participation which the party could not sustain before, and assessable without reports of experience. The ordering of a practice and the symbolic associations of its elements are separately acquired, so that a party may hold either without the other, with the consequence for Part VII that evidence for the propagation of one supplies no evidence for the other. Relational capacity acquired within a practice is capacity with respect to that practice, and acquisition within one practice may constrain a party with respect to another, so that acquisition is not accumulation without cost. Acquired capacity is sustained by frequent repeated participation and depends upon the institution supplying the occasions. Acquisitions are distinguished as revisable or closed by the dependences a party can enter afterward, the distinction is non-evaluative, and the comparison of traditions by this criterion is recorded as outstanding.

Chapter 55

The Consumption of Differentiation Within Musical Fields

This chapter closes Part VI by treating the failure mode identified in Chapter 1 as it appears within musical fields. Its role is to state what the consumption of differentiation looks like in a practice, to distinguish it from configurations resembling it, and to establish what the failure case reveals about the ordinary one. It undertakes to establish four things: that consumption of differentiation within a musical field takes three distinguishable forms; that a field may be organised so that differentiation is minimised deliberately, and that such a field is distinguished from a degraded one by a stated criterion; that the criterion is the one supplied in Chapter 54; and that the failure case exhibits, by its absence, the condition on which the ordinary case depends. It proceeds in five sections.

The chapter argues at the level of mechanism. Configurations of the kind treated here occur in settings whose particulars carry considerable weight, and an argument drawing its force from the weight of its examples is not carrying its own weight. Instances are accordingly given at the level of the arrangement and not of the occasion.

55.1 Three Forms of Consumption Within a Musical Field

This section identifies the forms. Its objective is to distinguish three arrangements by which differentiation among parties is consumed within a musical field, and to state what distinguishes each. It proceeds by treating them in turn.

Chapter 3 defined the consumption of differentiation as the reduction, through the operation of a relation, of the distinctions obtaining among the parties related. Three forms occur within musical fields.

Assimilation of parts. The parties deliver material progressively less distinguishable, until the strands are no longer separately audible. The arrangement was treated in Chapter 8, where the specification of simultaneous combinations was shown to admit either direction.

Withdrawal of the dependence-of-relation. The parties continue to deliver distinguishable material and cease to bear upon one another. Each party's delivery proceeds by reference to a single position, and no party's conduct alters what any other does. The parties remain distinguishable in their material and cease to be differentiated as parties, since Chapter 7 located the identity of a part in its relations to other parts.

Foreclosure of placement. The placements available to a party are reduced until one remains. A party whose delivery is determined at every point occupies a position in which the party's contribution and the specification of it coincide.

Claim 55.1.1. (Distinctness of the three forms). *Assimilation of parts, withdrawal of the dependence of relation and foreclosure of placement are distinct arrangements, and a field may exhibit any one without the others.*

The second form warrants emphasis. It is the form that a description recording only the sounding fails to detect, since the parties remain audibly distinct throughout. The detection requires the relational description fixed in Chapter 10.

55.2 Minimised Differentiation as a Deliberate Arrangement

This section treats a configuration resembling consumption. Its objective is to establish that fields organised to minimise differentiation are common and are not thereby degraded, and to state what distinguishes the two. It proceeds accordingly.

Chapter 7 fixed coincident delivery as the arrangement in which parties deliver the same material together, and Part III documented its prevalence: the collective recitation of a monastic assembly, the unison delivery of a liturgical chorus, the congregational singing of a large body.

In such fields differentiation among the delivering parties is minimal by design. On the definition of Chapter 3, taken alone, they would be classified with the degraded cases.

Claim 55.2.1. (Insufficiency of the outcome for the classification). *A field in which differentiation among parties is minimal is not thereby a field in which differentiation has been consumed, since the definition of consumption concerns the reduction of distinctions through the operation of a relation and a field may be constituted with minimal distinctions from the outset.*

The claim requires a criterion beyond the observed differentiation, and Section 55.3 supplies it.

A second observation is recorded. The fields of Part III in which delivery is coincident are fields in which parties are differentiated in other respects: the assembly delivering in unison is differentiated from the officiants, and the positions within it carry distinct eligibility. Minimal differentiation in the sounding coexists with differentiation in the field.

55.3 The Criterion Distinguishing the Cases

This section supplies the criterion. Its objective is to state it, to establish that it is the criterion of Chapter 54, and to apply it to the cases of Sections 1 and 2. It proceeds accordingly.

Claim 55.3.1. (Criterion of the degraded case). *A field in which differentiation among parties is minimal is degraded where the arrangement forecloses the parties' capacity to enter dependences the*

arrangement did not supply, and is undegraded where that capacity is retained.

The criterion is that of Chapter 54, applied to a field in place of an acquisition. It is available within the framework for the reason given there: it is assessed by the dependences parties are able to enter, and requires no assessment of the content of the arrangement.

Applied to the cases, it separates them.

A body delivering coincidentally within a practice in which its members hold other positions, deliver other material on other occasions, and may acquire the competences attaching to the adjudicating positions, retains the capacity the criterion requires. The minimal differentiation of the delivery is a feature of that delivery.

A field in which a party's placements have been foreclosed, in which the party bears upon no other party, and in which no further dependence is available, satisfies the criterion of degradation. The party remains within the field and its position within it admits of no alteration.

Claim 55.3.2. (Independence of the criterion from the observed texture). *The criterion distinguishing degraded from undegraded fields concerns the dependences available to parties beyond the arrangement observed, and two fields identical in their sounding may fall on opposite sides of it.*

The claim is the chapter's principal result and it is a methodological one. A recording supplies no evidence bearing on the question this chapter asks.

55.4 Conditions Under Which Consumption Proceeds

This section identifies conditions. Its objective is to state what the material of Parts III and IV suggests about the circumstances in which consumption occurs, and to record the standing of the suggestion. It proceeds accordingly.

Three conditions may be identified, and each is stated as a suggestion supported by the material and not as a result.

Concentration of adjudication. Where adjudication of parties' contributions is concentrated in a single position, the withdrawal of the dependence-of relation among parties is available, since each party's conduct may be regulated without reference to the others. Chapter 53 reported the substitution running in the other direction and its evidence bears here.

Complete specification. Where a specification determines a party's delivery at every point, foreclosure of placement is available, since the party's placements are supplied. Part IV documents the historical development of increasingly complete specification and treats its consequences there.

Scale without institutional differentiation. Where a field assembles many parties without differentiating positions among them, assimilation is available, since the parties are constituted alike.

Requirement 55.4.1. (Standing of the conditions). *The three conditions are stated as suggestions*

supported by the material of this book, and the demonstration that any of them produces consumption requires cases in which the condition varies while the arrangement is otherwise held constant, which this book does not supply.

55.5 What the Failure Case Exhibits

This section states what the chapter contributes to the argument of the book. Its objective is to identify what the consumption case shows about the ordinary case. It proceeds by stating the position and drawing the consequence.

Chapter 1 established that differentiation is generated by relation and that the phenomenon requiring explanation is the failure of a process to sustain it. The chapters since have described fields in which differentiation is sustained, and the sustaining has been treated as the ordinary case.

The failure case exhibits what the ordinary case depends upon. In each of the three forms of Section 1, what is lost is the same: the availability to a party of dependences the current arrangement does not supply. Assimilation removes the material by which a party would be distinguishable; withdrawal removes the parties' bearing upon one another; foreclosure removes the placements a party might occupy.

Claim 55.5.1. (Condition exhibited by the failure case). *The sustaining of differentiation within a musical field depends upon the availability to parties of dependences beyond those the current arrangement supplies, and the three forms of consumption are three ways in which that availability is removed.*

The claim identifies the condition that Chapter 1 sought and states it in the terms of Chapter 48. It also supplies the connection between this Part and Part VII: a practice propagating an arrangement into another domain propagates the availability or its absence, and Part VII treats what evidence would establish such a propagation.

55.6 Summary of Results

This chapter has established the following. Consumption of differentiation within a musical field takes three distinct forms: assimilation of parts, withdrawal of the dependence-of relation among parties, and foreclosure of the placements available to a party; the second is undetectable from a description recording only the sounding. A field in which differentiation is minimal is not thereby a degraded field, since consumption concerns reduction through the operation of a relation and a field may be constituted with minimal distinctions from the outset. The criterion distinguishing the cases is whether the arrangement forecloses the parties' capacity to enter dependences it did not supply, and two fields identical in their sounding may fall on opposite sides of it. Three conditions under which consumption proceeds are stated as suggestions, with the demonstration each would require recorded as unsupplied. The failure case exhibits the condition on which the ordinary case depends, namely the availability to parties of dependences beyond those the current arrangement supplies.

Part VII

Propagation Beyond Musical Practice

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Chapter 56

Channels by Which a Relational Arrangement Passes Beyond a Musical Practice

This chapter opens the fourth and last movement of the book's question, concerning the development of a society's relational systems alongside its musical practice. Its role is to state the claim this Part advances, to distinguish it from a stronger claim the book has declined, and to identify the channels through which propagation could occur together with the evidence each would require. It undertakes to establish four things: that the claim advanced concerns rehearsal and availability and does not concern causation; that four channels are distinguishable and that each requires evidence of a different kind; that the direction of any documented propagation must be established separately and is frequently indeterminate; and that a result established in Part VI restricts what evidence for propagation can show. It proceeds in five sections.

56.1 The Claim Advanced and the Claim Declined

This section fixes the claim. Its objective is to state it, to restate the stronger claim declined in Chapter 1, and to give the difference.

Chapter 1 declined the position that music causes the development of a society's other systems. The position is declined and is declined again here.

Claim 56.1.1. (The propagation claim advanced). *Musical practice is a site at which relational arrangements are exercised bodily and periodically by parties who also participate in other systems of the same society, and where an arrangement so exercised also obtains in another system, the exercise is a condition of that arrangement's persistence and supplies no account of its origin.*

The difference between the claim and the position declined is the difference between a condition of persistence and a cause of existence. An arrangement that is exercised persists more readily than one that is not; the claim asserts this and asserts nothing about how the arrangement arose in either system.

The claim is weaker than the keynote of Chapter 1 may suggest, and the weakening is stated at the head of this Part so that no chapter of it is read as advancing more.

56.2 Four Channels and the Evidence Each Requires

This section identifies the channels. Its objective is to distinguish four ways an arrangement might pass between a musical practice and another system, and to state what evidence each requires. It proceeds by treating them in turn.

Trained bodies. A party who has acquired a relational capacity within a musical practice, in the sense fixed in Chapter 54, carries that capacity into other settings in which the party acts. Evidence would consist in a demonstrated difference in the dependences such a party enters elsewhere, attributable to the acquisition.

Transmitted roles. A position defined within a musical practice may be instantiated in another system, with its eligibility criteria and its relations to other positions carried with it. Evidence would consist in documented instantiation, with the defining features preserved.

Institutional forms. An arrangement for provisioning, training, regulating or adjudicating a musical practice may be adopted by another system, or may be adopted by the musical practice from another system. Evidence would consist in documented adoption, and Part IV supplied instances in both directions.

Shared vocabulary. Terms and figures drawn from musical practice may be employed in the description of other systems, and terms drawn from other systems in the description of music. Evidence would consist in documented usage.

Claim 56.2.1. (Unequal evidential position of the four channels). *Of the four channels, institutional adoption and shared vocabulary are documented directly by the record; transmitted roles are documented where the instantiation is recorded; and trained bodies require a demonstration this book does not supply.*

The claim records the position at the outset, and it governs the Part. The chapters following rest substantially on the second and third channels, treat the fourth with caution, and advance nothing on the first.

56.3 The Weakness of the Vocabulary Channel

This section treats the fourth channel separately, since it is the one most frequently relied upon and the least probative. Its objective is to state why documented usage supports little.

Terms drawn from musical practice appear in the description of political, social and cosmological order across many traditions, and Part III and Part IV recorded instances. The appearance is documented and is not in question.

What the appearance supports is the question. A term employed in describing a second domain establishes that the describing party found the term apt. It establishes nothing about whether the arrangement the term names obtains in the second domain, and nothing about whether the musical practice bears upon the second domain in any way.

Claim 56.3.1. (Insufficiency of shared vocabulary for a propagation claim). *Documented use*

of musical vocabulary in the description of another system establishes that parties described the second system in those terms, and supports no claim that an arrangement passed between them.

The claim is restrictive and it is meant to be. It excludes a class of argument frequently advanced in this territory, in which the presence of harmonic or rhythmic metaphor in political writing is offered as evidence that musical practice shaped political thought.

Requirement 56.3.2. (Prohibition of the vocabulary inference). *No claim of propagation in this book rests upon documented use of musical vocabulary in the description of another system, and where such usage is reported it is reported as usage.*

56.4 The Direction Problem

This section treats the determination of direction. Its objective is to establish that the direction of a documented propagation requires separate evidence, and to state the cases in which it is available. It proceeds accordingly.

Where an arrangement obtains in a musical practice and in another system of the same society, three accounts are available: the arrangement passed from the music, it passed to the music, or both derive from a third condition.

Requirement 56.4.1. (Establishment of direction). *A claim that a relational arrangement passed between a musical practice and another system states the direction claimed and the evidence establishing it, and where the evidence is absent the claim is stated as a co-occurrence.*

Direction is available in two classes of case. Where an adoption is documented with its date and its parties, the direction is recorded by the documentation, and Chapter 42 supplied instances. And where an arrangement is attested in one domain substantially before the other and the domains are in contact, the chronology constrains the direction, subject to the general caution that attestation is not existence.

In the remaining cases direction is indeterminate, and Chapter 57 reports that the principal historical material of this Part falls in this class.

56.5 The Restriction Imposed by a Result of Part VI

This section states a restriction. Its objective is to bring forward a result of Chapter 54 and to state what it forbids in this Part.

Chapter 54 established that the ordering of a practice and the symbolic associations of its elements are separately acquired, so that a party may hold either without the other.

Requirement 56.5.1. (Separation of the propagating item). *A claim of propagation states whether the item propagated is an ordering or an association, and evidence for the propagation of one supplies no evidence for the propagation of the other.*

The requirement bears directly on the material of Chapter 57, where a tradition asserts a relation between musical order and political order. Whether the tradition asserts a shared ordering or a shared association, and which of the two the evidence bears upon, are questions that chapter must answer separately.

56.6 Summary of Results

This chapter has established the following. The claim advanced in this Part is that musical practice is a site at which relational arrangements are exercised bodily and periodically, so that where an arrangement is exercised its exercise is a condition of its persistence; the claim supplies no account of origin, and the position that music causes the development of other systems remains declined. Four channels are distinguishable, and their evidential positions are unequal: institutional adoption and shared vocabulary are directly documented, transmitted roles are documented where the instantiation is recorded, and the channel of trained bodies requires a demonstration this book does not supply. Documented use of musical vocabulary in describing another system establishes only that parties described it in those terms. The direction of a propagation requires separate evidence and is available where an adoption is documented or where chronology constrains it; in the remaining cases the claim is stated as a co-occurrence. A claim of propagation states whether the item propagated is an ordering or an association, since evidence for one supplies none for the other.

Chapter 57

The Classical Assertion of a Common Order and What the Evidence Supports

This chapter treats the principal historical material of this Part. Its role is to present a tradition's own assertion that music, rite, penal regulation and administration belong to one order, and to state what the evidence assembled in this book supports concerning it. It undertakes to establish four things: that the assertion is made explicitly within the tradition and is sustained across a long period; that two documented practices exhibit a musical matter administered by the apparatus that administers other matters of state; that these instances support co-administration and do not support propagation in either direction; and that the direction problem of Chapter 56 binds here and is not resolved. It proceeds in five sections.

Two matters of procedure govern the chapter. The tradition's assertions are reported as the tradition's and are not adjudicated. And the material treated belongs to a political tradition whose claims about governance are contested; this book reports what was asserted and what the record documents, and advances no position on the merits.

57.1 The Assertion as the Tradition Makes It

This section states the assertion. Its objective is to give it as the tradition gives it, and to fix its evidentiary standing.

The classical literature of the trajectory treated in Chapters 37 to 43 asserts a relation among four instruments of order: rite, music, penal regulation and administration. The assertion holds that these have one ultimate end, and it is elaborated at length: the character of a state's music is held to bear upon and to disclose the condition of its governance, and the regulation of music is accordingly treated as a matter of state.

The assertion is attested by the texts making it. Its dating is disputed, and Chapter 36 stated the three positions and left them open.

Claim 57.1.1. (Attested standing of the assertion). *That the tradition asserted a common order among rite, music, penal regulation and administration is attested by its texts, and the question of the date at which the assertion was first made is disputed and left open in this book.*

The claim distinguishes two things that are easily run together. That the assertion was

made is attested. That the relation asserted obtained is a separate question, and it is the question this chapter addresses.

57.2 The Two Documented Practices

This section presents the evidence. Its objective is to identify two practices in which a musical matter was administered by the apparatus administering other matters of state, and to state what each documents. It proceeds by treating them in turn.

The first is the regulation of ensemble scale by political rank, described in Chapter 37. The normative literature prescribes the scale and disposition of musical establishment proper to each rank, and the prescription is issued by the same apparatus that prescribes other observances proper to rank.

The second is the administration of pitch standards, also described in Chapter 37 and recurring across the trajectory. The determination of a standard pitch was a matter undertaken by state authority, and its revision is recorded among the acts of administrations.

Claim 57.2.1. (Administration of musical matters by the apparatus of state). *The scale of musical establishment admitted to a party and the standard of pitch employed were determined by state authority in this trajectory, so that musical matters were administered by the apparatus administering other matters of state.*

The claim is supported by the documentary record and is the strongest claim of this chapter. Its terms are chosen carefully: it asserts common administration and asserts nothing further.

57.3 What Co-Administration Supports and What It Does Not

This section states the assessment. Its objective is to establish that the instances of Section 2 support co-administration and support no propagation claim, and to give the reason. It proceeds accordingly.

Co-administration establishes that one authority regulated two domains. It supplies no account of any arrangement passing between them.

Claim 57.3.1. (Insufficiency of co-administration for a propagation claim). *That an authority regulated both a musical practice and other matters of state establishes that the two were subject to a common regulator, and supports no claim that a relational arrangement passed from either domain to the other.*

The claim disposes of the strongest historical material available to this Part, and the disposal is stated plainly because the material is frequently offered as establishing more.

Three accounts remain open on this evidence, and Chapter 56 named them. The arrangement may have passed from the musical practice to the administrative one; it may have passed

in the reverse direction; or both may follow from the character of the administering authority, which would be the third condition of that chapter's formulation.

The third account has a claim to attention that the evidence of this chapter positively supports. An authority that regulates by prescribing scales, dispositions and standards regulates music in the manner in which it regulates other matters, and the common character of the regulation is a fact about the authority.

Claim 57.3.2. (Availability of a common-source account). *The instances documented here are consistent with an account on which the regulation of musical matters and the regulation of other matters of state exhibit a common character because both are exercises of one administering apparatus, and this book advances no ranking among the three available accounts.*

57.4 The Item at Issue: Ordering or Association

This section applies the requirement of Chapter 56. Its objective is to determine which of the two the tradition's assertion concerns, and to state the consequence.

The requirement obliges a claim of propagation to state whether the item propagated is an ordering or an association.

The tradition's assertion, as the texts make it, concerns both. It holds that the sounds of a well-governed state differ in character from those of a poorly governed one, which is an association between a musical property and a political condition. And it holds that the disposition of an ensemble should correspond to the disposition of ranks, which concerns an ordering.

Claim 57.4.1. (Divided character of the asserted relation). *The classical assertion comprises an associative component, relating musical character to political condition, and an ordering component, relating the disposition of an ensemble to the disposition of ranks, and the evidence documented in Section 2 bears upon the second alone.*

The claim narrows the material substantially. The regulation of ensemble scale by rank documents the ordering component in its operation; the associative component is attested as an assertion and is documented in no practice this book has examined.

57.5 The Standing of This Chapter's Results

This section states what the chapter has and has not established. Its objective is to record the outcome and to identify what would advance the question.

Three results are established. The tradition asserted a common order among rite, music, penal regulation and administration, and the assertion is attested. Musical matters were administered by the apparatus administering other matters of state, in the two documented practices identified. And the assertion divides into an associative and an ordering component, of which the evidence bears upon the second.

One result is negative and is the chapter's principal outcome. Co-administration supports no propagation claim in either direction, and the direction problem of Chapter 56 is unresolved for this material.

What would advance the question is stated. A documented case in which a change in the regulation of one domain preceded a corresponding change in the other, with the two independently dated and a common source excluded, would bear upon direction. The administrative record of this trajectory is dense enough that such a case may exist, and the present author has not identified one.

Claim 57.5.1. (Outcome for the principal historical material). *The material of this chapter establishes common administration of musical and other matters of state, establishes the ordering component of the tradition's assertion in its operation, and leaves the direction of any propagation undetermined.*

57.6 Summary of Results

This chapter has established the following. That the tradition asserted a common order among rite, music, penal regulation and administration is attested by its texts, with the date of the assertion disputed and left open. The scale of musical establishment admitted to a party and the standard of pitch employed were determined by state authority, so that musical matters were administered by the apparatus administering other matters of state. Co-administration establishes a common regulator and supports no claim that an arrangement passed between the domains; three accounts remain open, including one on which the common character of the regulation follows from the character of the administering authority. The tradition's assertion divides into an associative component and an ordering component, and the documented evidence bears upon the second alone. The direction of any propagation is undetermined, and the form of case that would bear upon it is specified.

Chapter 58

Assembly, Periodic Recurrence, and the Constitution of a Collective Party

This chapter treats the constitution of collective parties within musical fields and what follows for the communities whose members constitute them. Its role is to state what the material of Parts III and IV establishes about the assembly of parties into a collective, and to assess it against the propagation claim of Chapter 56. It undertakes to establish four things: that musical occasions constitute collective parties by a documented mechanism, and that the mechanism is the one Part II identified; that eligibility to sound within an occasion is regulated in every tradition examined, so that the constituted collective is bounded; that periodic recurrence is the temporal condition under which such a collective persists; and that the literature offering an evolutionary account of these matters is divided and is reported without adjudication. It proceeds in five sections.

58.1 The Constitution of a Collective Party

This section states the mechanism. Its objective is to establish how a body of parties becomes a collective party within a musical field, and to identify what the constitution consists in. It proceeds accordingly.

Chapter 48 established that a party is present within a musical field through relations of dependence, and distinguished dependence-upon, dependence-of and registration. A collective party is constituted where a body of parties stands in dependence-of with respect to one another, so that each bears upon what the others do.

Collective delivery in the sense of Chapter 6 constitutes such a body directly. Where parties deliver material together, each party's placement bears upon the others', and the coordination requirement is the mechanism by which the bearing operates.

Claim 58.1.1. (Constitution of a collective party through the coordination requirement).
Where a body of parties delivers material together, each party's action bears upon the others' through the requirement that their placements be compatible, so that the body is constituted as a collective party by the coordination requirement and not by any further condition.

A philosophical literature on acting together bears directly upon this claim and is con-

ceded here. One position holds that acting together is constituted by interlocking individual intentions, meshing subplans and mutual responsiveness; a second holds that it requires a joint commitment to act as a body, which is irreducible to individual intentions and generates obligations among the parties.¹ Work on collective improvisation reports shared intentions emerging within performance in a manner that fits neither a prior plan nor a prior commitment.²

Claim 58.1.2. (Relation of the present mechanism to accounts of shared agency). *The mechanism stated here is weaker than either account of shared agency, since it requires of the parties neither an intention concerning the collective nor a commitment to it, and it is correspondingly available where those accounts' conditions are unmet.*

The claim identifies a mechanism of unusual clarity. In most settings in which a collective is said to be constituted, the constitution is asserted and its mechanism is not exhibited. Here the mechanism is a physical requirement of collective sounding, and Chapter 14 established its operation within the internal temporal organisation of a documented practice.

The two solutions to the coordination requirement, fixed in Chapter 6, constitute collectives differently, and the difference bears on Part VI. Under referenced coordination, each party's placement is supplied by a reference, and the parties bear upon one another through their common relation to it. Under acquired coordination, each party's placement is supplied by a practice held in common, and the parties bear upon one another directly.

Claim 58.1.3. (Two constitutions of a collective party). *Referenced coordination constitutes a collective whose members bear upon one another through a common relation to a reference, and acquired coordination constitutes a collective whose members bear upon one another directly, so that the collective differs in structure according to the solution adopted.*

58.2 Eligibility and the Bounding of the Collective

This section treats who may sound. Its objective is to establish that eligibility is regulated across the traditions examined and to state what follows.

Every tradition described in Part III regulates who may occupy which position within its sounding, and the regulations are documented in the seventh and sixth sections of each tradition chapter. Ordination, training, seniority, lineage, sex and status appear among the criteria, and they differ among traditions.

Claim 58.2.1. (Universality of eligibility regulation among the traditions examined). *Each of the ten traditions described in Part III regulates eligibility to occupy positions within its sounding,*

¹Michael E. Bratman, "Shared Cooperative Activity," *The Philosophical Review* 101, no. 2 (1992): 327–341, and *Shared Agency: A Planning Theory of Acting Together* (New York: Oxford University Press, 2014); Margaret Gilbert, "Walking Together: A Paradigmatic Social Phenomenon," *Midwest Studies in Philosophy* 15 (1990): 1–14. The two positions are incompatible and this book adopts neither.

²Louise Goupil, Thomas Wolf, Pierre Saint-Germier, Jean-Julien Aucouturier and Clément Canonne, "Emergent Shared Intentions Support Coordination during Collective Musical Improvisation," *Cognitive Science* 45, no. 1 (2021): e12932, DOI 10.1111/cogs.12932.

so that the collective constituted by an occasion is bounded, and the bounding is effected by criteria the tradition states.

Two consequences follow.

The collective constituted by a musical occasion is not the community at large, and a claim that a musical occasion constitutes a community requires that the relation between the bounded collective and the wider community be stated.

And the criteria of eligibility are among the relations a musical field carries, in the sense of Chapter 3. Where such criteria correspond to criteria operating in other systems of the same society, the correspondence is a co-occurrence of the kind Chapter 56 treated, and the direction problem binds.

58.3 Periodic Recurrence as a Condition of Persistence

This section treats the temporal condition. Its objective is to establish that the collectives described persist through periodic recurrence, and to connect the finding to Part VI.

The occasions described in Part III recur at fixed intervals: daily, at the divisions of the week, at points of an annual cycle, and at longer intervals for the large assemblies treated in Chapter 12.

Chapter 54 established that acquired relational capacity is sustained by frequent repeated participation, and that the traditions themselves record the loss of capacity where the repetition lapses.

Claim 58.3.1. (Dependence of the collective upon recurrence). *A collective party constituted by coordination among its members persists as such only where the occasions constituting it recur, since the capacity to coordinate is sustained by repeated participation, and the collective lapses where the occasions lapse.*

The claim connects the constitution of a collective to the maintenance of capacity, and it identifies the institutional dependence Chapter 25 recorded: the occasions recur because an institution supplies them.

58.4 The Evolutionary Literature and Its Division

This section reports a literature bearing on this chapter and states its standing. Its objective is to present the positions and to record that this book adopts neither.

A body of work has proposed that musical behaviour is to be understood by reference to its bearing upon the cohesion of groups, and has argued that this bearing unifies the accounts previously offered. A second body has proposed that musical behaviour is to be understood as signalling whose credibility derives from its costliness, in coalitional and in parental settings.

Both positions were advanced in the same forum and attracted extensive commentary.³

Requirement 58.4.1. (Standing of the evolutionary accounts). *The competing evolutionary accounts of musical behaviour are reported with their positions, this book adopts neither, and no claim in this book depends upon either.*

The reason for reporting them is that both bear upon the subject of this chapter and both would, if established, supply an account of why the mechanism of Section 1 recurs. This book's account of that recurrence is the one given in Chapter 25: the coordination requirement arises from the conditions of collective sounding, and no inherited disposition is needed to explain its recurrence. The two literatures are compatible with that account and go beyond it, and the question they address is not the question this book asks.

58.5 Assembly Without Co-Presence

This section treats the configuration described in Chapter 35. Its objective is to state what becomes of the mechanism of Section 1 where parties are not co-present, and to record what the chapter leaves open.

Chapter 35 established that under distribution the attending parties' registration bears upon a fixed organisation not at all within the occasion of hearing, and left open whether an aggregate bearing across occasions constitutes participation.

The consequence for this chapter is direct. The mechanism of Section 1 constitutes a collective through mutual bearing, and where the bearing is absent within an occasion the mechanism does not operate.

Claim 58.5.1. (Inoperability of the constituting mechanism under distribution). *Where parties attend a fixed organisation without bearing upon it or upon one another within the occasion, the mechanism constituting a collective party by mutual coordination does not operate, and any collective so constituted is constituted otherwise.*

What constitutes it otherwise is a question this chapter leaves open, and the reason for leaving it open is stated. The candidate mechanisms available are shared attention to a common object, shared acquisition of a repertory, and mutual bearing across occasions through the arrangements of distribution. Each is a mechanism of a different kind, the evidence bearing upon them is of a different kind again, and this book has assembled none of it.

³Patrick E. Savage, Psyche Loui, Bronwyn Tarr, Adena Schachner, Luke Glowacki, Steven Mithen and W. Tecumseh Fitch, "Music as a coevolved system for social bonding," *Behavioral and Brain Sciences* 44 (2021), article e59, DOI 10.1017/S0140525X20000333; and Samuel A. Mehr, Max M. Krasnow, Gregory A. Bryant and Edward H. Hagen, "Origins of music in credible signaling," *Behavioral and Brain Sciences* 44 (2021), article e60, DOI 10.1017/S0140525X20000345. The two were published together with extensive peer commentary.

58.6 Summary of Results

This chapter has established the following. A body of parties delivering material together is constituted as a collective party by the coordination requirement, which is a mechanism the material exhibits; referenced and acquired coordination constitute collectives of differing structure, the first through a common relation to a reference and the second through direct mutual bearing. Each of the ten traditions described in Part III regulates eligibility to occupy positions within its sounding, so that the constituted collective is bounded, and a claim that a musical occasion constitutes a community requires the relation between the bounded collective and the wider community to be stated. A collective so constituted persists only where its occasions recur, since the capacity to coordinate is sustained by repeated participation. The competing evolutionary accounts of musical behaviour are reported and neither is adopted. Where parties attend a fixed organisation without mutual bearing within the occasion, the constituting mechanism does not operate, and what constitutes a collective under those conditions is left open.

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Chapter 59

The Division of Musical Labour and Its Relation to Social Distinctions

This chapter treats the relation between the positions a musical practice differentiates and the distinctions obtaining in the society maintaining it. Its role is to assemble what Parts III and IV documented on the matter and to assess it against the claim of Chapter 56. It undertakes to establish four things: that the positions differentiated within musical practices carry criteria of eligibility drawn from distinctions obtaining outside them; that the status attaching to a musical position is a property of the position and not of the practice, which is exhibited by cases in which one practice is performed from positions of opposite standing; that the audibility of a distinction within a sounding organisation is a further matter requiring separate evidence; and that the material of this chapter documents reproduction of distinctions and documents no propagation. It proceeds in five sections.

59.1 Eligibility Criteria Drawn From Outside the Practice

This section states the first finding. Its objective is to establish that the criteria regulating musical positions are drawn from distinctions obtaining outside the musical practice, and to identify the criteria documented.

Chapter 58 established that each of the ten traditions described in Part III regulates eligibility to occupy positions within its sounding. The present section asks where the criteria come from.

The criteria documented across Parts III and IV include ordination and monastic seniority; lineage; sex; ritual purity; social status and occupational classification; credential and training; and administrative designation. Of these, credential and training are internal to musical practice; the remainder obtain independently of it.

Claim 59.1.1. (External derivation of eligibility criteria). *The criteria regulating access to positions within the musical practices documented in this book are drawn substantially from distinctions obtaining in the societies maintaining those practices, and are applied to musical positions without alteration.*

The claim bears on the propagation question in a direction worth stating. Where a distinc-

tion obtaining in a society is applied to a musical position, the passage is from the society to the practice, which is the reverse of the direction the keynote of Chapter 1 might suggest.

59.2 Status as a Property of the Position

This section states the second finding. Its objective is to establish that the standing attaching to a musical position is a property of the position and not of the practice performed from it. It proceeds by giving the exhibiting cases.

Two cases exhibit it, and both belong to the trajectory of Chapters 40 and 41.

The first is the coexistence of a professional theatrical position of low and legally disadvantaged standing with a literati instrumental position of high standing, within one field and one period. The two positions differ in provisioning, in training and in repertory, and they differ in standing by an amount the record documents.

The second is nearer to the point, since it concerns one instrument. The instrument of literati practice was performed by literati as an accomplishment of cultivation and by professionals for payment, and the standing of the two performers differed.

Claim 59.2.1. (Attachment of status to the position). *Where one practice is performed from positions differing in provisioning and in social classification, the standing of the performers differs accordingly, so that status attaches to the position occupied and not to the practice performed.*

The claim excludes a form of argument available in this territory, in which the standing of a musical practice within a society is inferred from the standing of its practitioners. The inference fails where the practice is performed from more than one position.

Requirement 59.2.2. (Prohibition of the inference from practitioner standing). *The standing of a musical practice within a society is not inferred in this book from the standing of those who perform it, since a practice may be performed from positions of differing standing.*

59.3 The Audibility of a Distinction

This section treats a further question. Its objective is to distinguish the differentiation of positions from the audibility of that differentiation, and to state what evidence the second requires.

That a practice differentiates positions is established by its rules of eligibility and by its assignment of material. That the differentiation is audible within the sounding organisation is a further matter.

Three cases documented in this book bear upon it. Chapter 14 established that the officiant and the assembly differ in whether their delivery is metered, which is a differentiation audible in the temporal organisation. Chapter 19 recorded that melodically elaborate chants were assigned to soloists, and recorded a competing explanation from performance competence which the evidence did not exclude. And Chapter 37 established that ensemble scale was regulated by rank, which is audible as scale.

Claim 59.3.1. (Separate evidential requirement for audible differentiation). *That a practice differentiates positions is established by its rules and assignments, and that the differentiation is audible within the sounding organisation requires evidence about the sounding, which the three documented cases supply in differing degrees and which competing explanations may account for.*

The claim restrains a description that would otherwise be available throughout this book. A field's positional structure may be described from institutional evidence alone; a claim that the structure is heard requires more.

59.4 Access, Sex, and the Documented Sites of Practice

This section treats a criterion appearing across the traditions and configurations. Its objective is to record what the material documents and to state the evidential consequence.

Access to musical positions was differentiated by sex across the traditions of Part III and the configurations of Part IV, and the differentiation took different forms: exclusion from specified positions, confinement to specified settings, and restriction of the occasions on which performance might occur.

The consequence for the evidence is direct and is recorded because it bears upon every description in this book. Where access is restricted, the practices documented are the practices of those with access, and the sounding of the excluded is documented where at all in settings the restriction permitted. Chapter 30 recorded convent and charitable-institution music-making as the documented sites for one configuration, and the record for others is thinner.

Claim 59.4.1. (Restriction of the documentary record by restriction of access). *Where access to musical positions is differentiated, the surviving record documents the practices of those admitted, so that a description drawn from the record describes a portion of a field determined by its rules of access.*

59.5 The Assessment Against the Propagation Claim

This section states the outcome. Its objective is to assess the material of this chapter against Chapter 56 and to report the result.

The material documents the application of social distinctions to musical positions. It documents no case in which a distinction differentiated within a musical practice was subsequently applied outside it.

Claim 59.5.1. (Direction of the documented relation). *The relation between musical positional structure and social distinction documented in this book runs from the society to the practice, and no case is documented in which a distinction originating in a musical practice was applied within another system.*

The result is negative for the fourth movement of the book's question as that movement might be read, and it is stated plainly. What the chapter supports is the weaker claim of

Chapter 56: musical occasions are sites at which distinctions obtaining elsewhere are exercised, periodically and bodily, by parties who also occupy positions elsewhere.

Claim 59.5.2. (Support for the exercise claim). *Musical occasions exercise distinctions obtaining in the societies maintaining them, through the assignment of positions by criteria drawn from those distinctions, and the exercise is periodic and bodily.*

Whether the exercise bears upon the persistence of the distinctions exercised is the question the claim of Chapter 56 asserts and this book has not established. Chapter 61 states what its establishment would require.

59.6 Summary of Results

This chapter has established the following. The criteria regulating access to musical positions are drawn substantially from distinctions obtaining in the societies maintaining the practices, and are applied without alteration, so that the documented passage runs from society to practice. Status attaches to the position occupied and not to the practice performed, which is exhibited by one practice performed from positions of differing standing, and which excludes inferring the standing of a practice from the standing of its practitioners. That a practice differentiates positions is established by its rules; that the differentiation is audible requires separate evidence about the sounding, which three documented cases supply in differing degrees. Where access is differentiated, the surviving record documents the practices of those admitted. The material documents no case in which a distinction originating in a musical practice was applied within another system, and supports the weaker claim that musical occasions exercise distinctions obtaining elsewhere.

Chapter 60

State Undertakings in Music and the One Direction the Record Establishes

This chapter treats the relation between musical practice and the modern state. Its role is to assemble the instances documented in Part IV and to establish that they supply the one class of case in which the direction of a propagation is determined by the record. It undertakes to establish four things: that four state undertakings are documented and that each altered a constituent of a musical field; that the direction in each runs from the state apparatus to the musical practice, and is established by the documentation and not inferred; that the undertakings constitute an intervention in the relational constitution of the practices affected, describable in the terms of Part II; and that the class of case supplies no support for propagation in the opposite direction. It proceeds in five sections.

A matter of procedure governs the chapter. State undertakings in music are contested politically, and the traditions and jurisdictions concerned hold differing views of them. This book reports what was undertaken and what the record documents, and advances no position on the merits of any undertaking.

60.1 Four Documented Undertakings

This section identifies the instances. Its objective is to name four undertakings documented in Part IV and to state what each altered.

Instruction within general schooling. Chapter 42 described the introduction of musical instruction into state schooling in two jurisdictions, with curricula and song collections compiled for it. The undertaking altered the reproductive dimension fixed in Chapter 27.

Ceremonial and military ensembles. The same chapter described the establishment of ensembles attached to state occasions. The undertaking altered the occasions on which a sounding practice was performed and the parties before whom it was performed.

Institutional foundation. Chapters 32 and 42 described the founding of conservatories and, in the latter, of state bodies charged with musical matters. The undertaking altered the social-structural dimension by supplying parties trained to a common standard.

Designation and classification. Chapters 42 and 43 described the classification of existing

practices within categories the reforms established, and the later designation of practices and of individuals under heritage instruments. The undertaking altered the institutional dimension and, in the case of designated bearers, the occupancy of the adjudicative position.

Claim 60.1.1. (Alteration of distinct constituents by distinct undertakings). *The four documented state undertakings altered the reproductive, occasional, social-structural and institutional constituents of musical fields respectively, so that each is an instance of the form fixed in Chapter 10.*

60.2 The Direction Established by the Record

This section states the chapter's principal result. Its objective is to establish that the direction of these propagations is determined by the documentation.

Chapter 56 established that direction requires separate evidence, and identified two classes of case supplying it: documented adoption with its date and parties, and chronology constraining the order.

The four undertakings fall in the first class. Each was undertaken by an identifiable authority, at a date the record supplies, by instruments the record preserves, and upon practices existing before the undertaking.

Claim 60.2.1. (Determination of direction for state undertakings). *The direction of the alterations documented in Section 1 runs from a state apparatus to musical practices, and the direction is established by founding instruments, curricula and designations bearing dates, so that it requires no inference.*

The claim is the principal result of this chapter and, on the evidence assembled in this book, of Part VII. Of the propagation relations this Part has examined, the state undertakings are the class in which direction is documented, and the direction documented runs toward musical practice.

60.3 The Undertakings Described Relationally

This section describes the undertakings in the terms of Part II. Its objective is to state what they alter within a musical field, and thereby to establish that they are interventions in relational constitution and not merely in provision.

Three alterations may be stated.

Alteration of the transmission relation. Chapter 54 established that acquired relational capacity is capacity with respect to a practice, and Chapter 16 established that coordination by common acquisition requires participants sharing a line of instruction. Instruction within general schooling supplies a line of instruction reaching parties who will not become practitioners, which alters what a population has acquired in common.

Alteration of the occupancy of the adjudicative position. Designation of individuals as bearers of a practice confers standing from outside the transmitting community, which Chapter 43

established.

Alteration of the criteria of correctness. Designation attaches criteria of correct performance administered by the designating apparatus, so that the adjudication of whether a delivery is correct comes to be exercised by reference to an external standard.

Claim 60.3.1. (Intervention in relational constitution). *State undertakings in music alter the line of instruction a population holds in common, the occupancy of the adjudicative position, and the standard by which correctness is adjudicated, so that they are interventions in the relational constitution of the practices affected.*

The claim identifies what the relational description adds to the institutional histories, and its standing was assessed in Chapter 44. The institutional histories document the undertakings; the description above states what within a musical field they altered.

60.4 The Canon and the Administered Repertory

This section treats a further undertaking, distinguished from those of Section 1 because its agency is mixed. Its objective is to describe it and to state its relational consequence.

Chapter 32 described the retention of works of earlier configurations within performing repertoires, and recorded the consequence that a retained repertory is performed under the conditions of the retaining configuration.

The retention is effected by institutions of several kinds, including state, municipal, commercial and scholarly bodies, so that its agency is mixed and the direction analysis of Section 2 does not apply to it in the same form.

Claim 60.4.1. (Relational consequence of repertory retention). *Retention of a repertory beyond the configuration composing it places notated material produced under one set of relational conditions into performance under another, so that the relational architecture of a performance and that of its notated material may differ.*

The claim bears on the use of recordings throughout this book, and Chapter 32 entered it there for that reason. It bears here because retention is among the undertakings by which institutions act upon musical fields, and its consequence is relational and not merely curatorial.

60.5 What This Class of Case Does Not Support

This section states the limit. Its objective is to record what the material does not establish and to prevent an inference the chapter's results might invite.

The material establishes that state apparatus acted upon musical practices, in four documented ways, with direction determined by the record.

It establishes nothing in the opposite direction. No case is documented here in which a relational arrangement exercised within a musical practice was subsequently adopted by

a state apparatus, and Chapter 57 reported that the strongest historical material bearing on such a claim supports co-administration alone.

Claim 60.5.1. (Asymmetry of the documented record). *The record assembled in this book documents propagation from state apparatus to musical practice and documents none in the reverse direction, and the asymmetry is a property of the record and not a demonstration that the reverse does not occur.*

The final clause is required. An asymmetry in what is documented reflects what institutions record, and institutions record their own undertakings. A relational arrangement passing from a musical practice into another system would leave a record only where the receiving system documented its own alteration, which is a narrower class of event.

60.6 Summary of Results

This chapter has established the following. Four documented state undertakings altered the reproductive, occasional, social-structural and institutional constituents of musical fields. The direction of these alterations runs from a state apparatus to musical practices and is established by dated founding instruments, curricula and designations, so that this is the class of case in which Part VII's direction problem is resolved by the record. The undertakings alter the line of instruction a population holds in common, the occupancy of the adjudicative position, and the standard by which correctness is adjudicated, and are therefore interventions in relational constitution. Retention of a repertory beyond its composing configuration places notated material produced under one set of conditions into performance under another. The record documents no propagation in the reverse direction, and the asymmetry is a property of what institutions record.

Chapter 61

The Standing of the Propagation Claim at the Close of the Assessment

This chapter closes Part VII. Its role is to assemble what the Part has established, to state the standing of the claim entered in Chapter 56, and to specify what would advance it. It undertakes to establish four things: that the Part's positive results concern the direction opposite to the one its movement of the keynote might suggest; that three alternative accounts remain available for every co-occurrence the Part has documented, and that none has been excluded; that one class of case would bear upon the claim and is identified; and that the fourth movement of the book's question is reported as substantially unfulfilled. It proceeds in five sections.

61.1 What the Part Established

This section assembles the results. Its objective is to state them together so that the assessment may be made against them.

Four results are established.

Musical occasions constitute collective parties by the coordination requirement, and the collectives so constituted are bounded by eligibility criteria and persist only where the occasions recur (Chapter 58).

The criteria regulating access to musical positions are drawn from distinctions obtaining in the societies maintaining the practices, and are applied without alteration (Chapter 59).

Musical matters were administered by the apparatus administering other matters of state in the trajectory examined, which establishes common administration (Chapter 57).

State undertakings altered four constituents of musical fields, with direction established by the documentation (Chapter 60).

Claim 61.1.1. (Direction of the Part's positive results). *Of the results established in this Part, those in which a direction is determined run from societies and their institutions toward musical practices, and no result establishes a passage in the reverse direction.*

The claim states the Part's outcome and states it against the reading its movement of the keynote invites. The fourth movement asks how musical practice bears upon the development

of a society's other relational systems; what the Part documents is substantially the converse.

61.2 The Alternative Accounts and Their Standing

This section states what remains open. Its objective is to enumerate the accounts available for the co-occurrences documented and to record that none is excluded.

Chapter 56 identified three accounts available wherever an arrangement obtains in a musical practice and in another system: passage from the music, passage to the music, and derivation of both from a third condition.

For the material of Chapter 57, all three remain open, and the chapter recorded that the third has positive support from the character of the administering apparatus.

For the material of Chapter 59, the second is documented and the first is not, and a third-condition account remains available for the correspondence between musical and social eligibility criteria.

For the material of Chapter 60, the second is documented directly.

Claim 61.2.1. (Non-exclusion of the alternative accounts). *No co-occurrence documented in this Part has had its alternative accounts excluded, and where a direction is established it is established by documentation of an act and not by the exclusion of alternatives.*

The claim records a methodological feature of the whole Part. The directions established here are established because someone recorded doing something, and the classes of case supplying such records are limited to institutional action.

61.3 The Case That Would Bear on the Claim

This section specifies the missing evidence. Its objective is to state the class of case that would bear upon the claim of Chapter 56, and to identify where it might be sought.

The claim asserts that the exercise of an arrangement within a musical practice is a condition of that arrangement's persistence elsewhere. Testing it requires a case in which the exercise lapses and the arrangement's persistence elsewhere may be observed.

Requirement 61.3.1. (Form of the bearing case). *A case bearing on the propagation claim comprises a musical practice whose occasions ceased, an arrangement exercised within those occasions and also obtaining in another system of the same society, and a documented observation of that arrangement's condition in the other system after the cessation.*

Two features of the requirement are demanding and are stated. The cessation must be attributable to conditions independent of the other system, since a cessation caused by the same conditions that altered the other system supplies a common source. And the arrangement must be identified in both systems in terms permitting its condition to be assessed in each, which the vocabulary channel of Chapter 56 cannot supply.

Where such cases might be sought is indicated. Part III and Part IV documented interruptions of practice: the loss of school traditions recorded in Chapter 16, the institutional interruptions recorded in Chapter 43, and the reconstitutions recorded in Chapter 17. Each is a documented cessation. Whether any is accompanied by an independently documented observation of an arrangement's condition elsewhere is a question this book has not investigated.

61.4 Reverse Propagation and Its Standing

This section treats what the Part has documented most fully. Its objective is to state the standing of the reverse direction and to record what it costs the book's fourth movement.

The reverse direction is documented in Chapter 60 and in Chapter 59, and it is documented well: institutions act upon musical practices, and the acts are recorded with their dates and instruments.

Claim 61.4.1. (Evidential position of the reverse direction). *Propagation from institutions and social distinctions toward musical practice is documented in this book with dated instruments and identified parties, and constitutes the best-evidenced propagation relation the book has established.*

The cost to the fourth movement is stated plainly. A movement asking how music participates in the development of a society's relational systems has, in this book, produced its strongest evidence for the participation of a society's relational systems in the development of music.

Two observations qualify the cost without removing it.

The asymmetry is partly an artefact of what institutions record, as Chapter 60 noted. And the claim of Chapter 56 was entered as a claim about exercise and persistence, which the reverse direction does not contradict: an arrangement may pass from an institution into a musical practice and be exercised there thereafter.

Claim 61.4.2. (Compatibility of the two directions). *An arrangement passing from an institution into a musical practice may thereafter be exercised within that practice, so that the documented reverse propagation and the exercise claim of Chapter 56 are compatible and the second is untested.*

61.5 The Standing of the Fourth Movement

This section reports the outcome for the book. Its objective is to state where the fourth movement of the keynote stands at the close of this Part.

The fourth movement asked how musical practice bears upon the development of the other relational systems of a society. This Part has established mechanisms by which musical occasions constitute and bound collective parties, has established that those occasions exercise distinctions obtaining elsewhere, and has established that institutions act upon musical practices in documented ways.

It has established no case of an arrangement passing from a musical practice into another system.

Claim 61.5.1. (Standing of the fourth movement). *The fourth movement of the book's question is substantially unfulfilled, in that no case is established in which a relational arrangement passed from a musical practice into another system of the same society, and the claim entered in Chapter 56 is untested.*

The report is entered here so that the final chapter may take it up with the other outcomes, and so that no reader of Part VII takes its mechanisms for the propagation the movement asked after.

61.6 Summary of Results

This chapter has established the following. Of the results established in Part VII, those in which a direction is determined run from societies and their institutions toward musical practices. No co-occurrence documented in the Part has had its alternative accounts excluded, and the directions established rest on documentation of institutional acts. The class of case bearing on the propagation claim is specified, comprising a documented cessation of musical occasions together with an independent observation of an arrangement's condition elsewhere, with two demanding conditions attached; candidate cessations are identified in Parts III and IV and none has been investigated. Propagation from institutions toward musical practice is the best-evidenced propagation relation the book has established, and is compatible with the exercise claim, which remains untested. The fourth movement of the book's question is substantially unfulfilled.

Part VIII

Formalisation

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Chapter 62

The Standing of a Formal Apparatus and the Discipline Governing Its Transfers

This chapter opens the formal Part. Its role is to fix what a formal apparatus is required to do in this book, to distinguish a formal model from a design employing it, and to state the discipline under which structures are borrowed from other fields. It undertakes to establish four things: that a model asserts nothing and a design asserts, so that a book supplying models incurs an obligation to supply at least one design; that a formal apparatus earns its place here by one of three services, and that decoration is excluded; that a structural property licenses the choice of a source and licenses nothing further, so that every transfer requires its own argument at the point of transfer; and that the conditions under which the apparatus of this Part would be abandoned are fixed in advance. It proceeds in five sections.

62.1 Models, Designs, and the Obligation a Model Incurs

This section fixes two terms. Its objective is to distinguish them and to state what follows for this Part.

Definition 62.1.1. (Formal model). *A formal model is a specification of objects and of relations among them, together with the operations admitted upon them, which asserts nothing about any subject matter.*

Definition 62.1.2. (Design). *A design is a formal model together with an assignment of its objects and relations to the constituents of a subject matter, and it asserts what the model under that assignment states.*

The distinction is consequential and is easily elided. A model may be exhibited, its properties established, and its elegance remarked, and nothing whatever will have been asserted about music. Assertion begins with the assignment.

Requirement 62.1.3. (Obligation of a design). *A formal model presented in this Part is accompanied by at least one design assigning its objects to constituents of a musical field, and a model for which no design is supplied is presented as a model and claimed for nothing.*

62.2 The Services a Formal Apparatus May Render Here

This section states what a formal apparatus must do to earn its place. Its objective is to name three services and to exclude a fourth use.

Three services are admitted.

An apparatus may *pose a question precisely* that the prose of the preceding Parts posed loosely. Chapter 4 raised the question of identifiability and Chapter 68 treats it formally, which is a service of this kind.

An apparatus may *establish a limitation*, by showing that a structure of a stated kind cannot represent a distinction the subject matter requires, or cannot be determined by evidence of a stated kind.

An apparatus may *distinguish cases* that a prose description conflates, by supplying objects that differ where the description supplies one term.

A fourth use is excluded. An apparatus that restates in symbols what the prose states, without posing a question, establishing a limitation or distinguishing cases, has supplied notation.

Requirement 62.2.1. (Justification of the apparatus). *Each formal structure introduced in this Part is accompanied by a statement of which of the three services it renders, and a structure rendering none is withdrawn.*

62.3 The Discipline of Transfer

This section states the discipline governing borrowing. Its objective is to establish that a structural property licenses the choice of a source and nothing further, and to state the requirement following from it.

The apparatus of this Part borrows structures developed in physics and in the theory of distributed computation. The borrowing requires justification, and the justification available is of a limited kind.

The property licensing the choice of source is background independence. The account of this book refuses a background in a specific and stated sense: Chapter 6 established that a musical field may supply no maintained temporal reference, and Chapter 3 established that a musical relation is a dependence and not a position within a given space. An apparatus presupposing a fixed stage upon which events are placed is accordingly unsuitable, and apparatus developed where such a stage is refused is suitable to consider.

Claim 62.3.1. (Scope of the licence supplied by background independence). *That the account of this book refuses a background licenses the choice of sources developed where a background is likewise refused, and licenses no further property of those sources.*

Two consequences follow and both are observed in this Part.

Formalisms presupposing a stage are excluded by the same consideration, and the exclusion is stated with its ground: formalisms of concurrency presupposing a set of places, or a domain of fluents, or a shared alphabet of actions, each supply the stage the account refuses.

And every property transferred beyond the licensing one requires its own argument at the point of transfer.

Requirement 62.3.2. (Argument at the point of transfer). *A property of a borrowed structure is employed in this Part only where an argument for its applicability is stated where it is employed, and a property employed without such an argument is struck.*

62.4 What Is Declined and at What Cost

This section states a refusal. Its objective is to identify the component of the borrowed apparatus that is declined, to give the reason, and to state what the refusal costs.

The apparatus treated in Chapter 67 assigns weights to the histories it generates, and the weights are what make that apparatus a theory of anything in its own field. The weights are declined here.

Claim 62.4.1. (Ground of the refusal of weights). *A weight over histories presupposes that the histories weighted are drawn from a recurring class, and an account holding the conditions of interpretation to be historically produced is committed to the singularity of a trajectory, so that the two are in tension.*

The cost is stated and is substantial. A structure representing histories without weighting them represents what may occur and supplies no account of what does occur. Chapter 68 accordingly poses the question of realization as a question about a class of admissible realizations and not as a question about their relative likelihood.

The refusal is entered as a limitation of this book and not as a result about its subject matter. Whether a weighting could be supplied under a different account of the conditions of interpretation is a question left open.

62.5 Conditions Under Which the Apparatus Would Be Abandoned

This section fixes the conditions in advance. Its objective is to state what would defeat the apparatus of this Part, distinctly from what would defeat the framework as a whole, which Chapter 5 fixed.

Three conditions are stated.

The apparatus is defeated where a formalism presupposing a common space of musical relations is exhibited which nonetheless represents the distinctions the account requires, since the refusal of such a space is what licenses the borrowing.

The apparatus is defeated where the structures introduced are shown to render none of

the three services of Section 2 for any question this book raises.

The apparatus is weakened, without being defeated, where the designs supplied under Requirement 62.3 prove to be constructible only for cases assembled for the purpose and not for cases observed. Chapter 69 reports the standing of the designs on this condition.

62.6 Summary of Results

This chapter has established the following. A formal model asserts nothing and a design asserts, so that every model presented here is accompanied by at least one design or is claimed for nothing. A formal apparatus earns its place by posing a question precisely, by establishing a limitation, or by distinguishing cases that prose conflates, and a structure rendering none of these is withdrawn. Background independence licenses the choice of sources and licenses nothing further, so that formalisms presupposing a stage are excluded on the same ground and every further property transferred requires an argument at the point of transfer. Weights over histories are declined, on the ground that a weight presupposes a recurring class while the account is committed to the singularity of a trajectory, and the cost is that the apparatus represents what may occur and supplies no account of what does. Three conditions under which the apparatus would be abandoned or weakened are fixed in advance.

Chapter 63

Background Dependence and the Description of a Field Supplying No Reference

This chapter treats the property that licenses the borrowings of this Part and that distinguishes the two classes of musical field established in Part II. Its role is to state what a background is in a musical setting, to establish that fields lacking one require a description of a different form, and to identify the invariance such a description must exhibit. It undertakes to establish four things: that the distinction between referenced and unreferenced fields fixed in Chapter 6 is a distinction in whether a background obtains; that a description of an unreferenced field must be invariant under reparametrisation of its temporal coordinate; that the invariance requirement excludes a class of description in general use and distinguishes cases that description conflates; and that the requirement supplies the criterion by which the apparatus of Chapter 64 was constructed. It proceeds in five sections.

63.1 What a Background Is in a Musical Setting

This section fixes the term. Its objective is to define a background and to establish that the definition applies to the two classes of Chapter 6.

Definition 63.1.1. (Temporal background). *A musical field supplies a temporal background where a maintained periodic structure obtains independently of the events placed within it, such that an event's temporal position is specified by reference to that structure and is specifiable in the absence of every other event.*

The definition captures what Chapter 6 called a referenced field. An event in such a field occupies a position within a maintained scheme, and the position is determinate whether or not any other party is sounding.

An unreferenced field supplies no such structure. An event's placement is determinate only in relation to the events adjacent to it: it follows a preceding event at a distance the practice fixes, and its placement admits no specification independent of what precedes it.

Claim 63.1.2. (Identity of the two distinctions). *The distinction between referenced and unreferenced fields fixed in Chapter 6 is the distinction between fields supplying and fields withholding a temporal background in the sense of Definition 63.1.*

The claim is stated because it identifies where in this book the property licensing the borrowings of this Part is exhibited empirically. Part III documented unreferenced fields in five traditions, and the documentation is the ground on which the apparatus of this Part is built.

63.2 Reparametrisation and the Form of an Adequate Description

This section states the requirement. Its objective is to establish that a description of an unreferenced field must be invariant under a transformation of its temporal coordinate, and to state what the requirement means.

A description of a sequence of events may assign each event a number, and the assignment supplies a coordinate. Where the field supplies a background, the coordinate has significance: it records the event's position within the maintained structure. Where the field supplies none, the coordinate records the analyst's choice.

Claim 63.2.1. (Absence of significance in a coordinate assigned to an unreferenced field).

Where a musical field supplies no temporal background, a numerical coordinate assigned to its events by an analyst records the analyst's choice of assignment, and two assignments preserving the order of events describe the same field.

Requirement 63.2.2. (Invariance under reparametrisation). *A description of an unreferenced musical field asserts nothing that changes under a transformation of its temporal coordinate preserving the order of events, and a description asserting something that so changes has asserted a property of its own coordinate.*

The requirement is the formal statement of a caution Part III observed in practice. Chapters 16 and 20 described unreferenced practices, and their descriptions proceeded by relations among events, by the leading voice, by breath and phrase, and by the practice held in common. None assigned durations in units.

63.3 What the Requirement Excludes

This section states the exclusion. Its objective is to identify a class of description in general use that the requirement excludes, and to state what the exclusion costs.

Descriptions assigning measured durations to the events of an unreferenced field are excluded. Such descriptions are produced routinely: a transcription of unmeasured chant into a notation carrying durational values assigns each event a duration, and comparisons drawn from such transcriptions compare the assignments.

Claim 63.3.1. (Exclusion of measured description for unreferenced fields). *A description assigning measured durations to the events of an unreferenced field asserts properties that change under reparametrisation, and comparisons drawn between two such descriptions compare the transcribers' assignments together with the fields described.*

The claim bears directly upon Chapter 25, which recorded that a tradition employing distinctions the transcriptional practice fails to record is understated by measures drawn from transcriptions. The present claim identifies a second and distinct defect: measures drawn from transcriptions of unreferenced fields record properties the fields do not possess.

Requirement 63.3.2. (Prohibition of measured description for unreferenced fields). *No comparison in this book rests upon durations assigned by transcription to the events of a field supplying no temporal background, and where such transcriptions are consulted their assignments are reported as the transcriber's.*

The cost of the exclusion is recorded. Measured transcription is the principal means by which unmeasured repertoires have been made comparable, and the requirement withdraws it without supplying a replacement of comparable convenience. What replaces it is the relational description of Section 4, which is more laborious and asserts less.

63.4 The Description That Survives the Requirement

This section states what may be asserted. Its objective is to identify the properties of an unreferenced field that are invariant under reparametrisation, and thereby to state the form of an adequate description.

Four classes of property survive.

Order. That one event precedes another is invariant under every reparametrisation preserving order.

Coincidence. That two events occur together is invariant.

Ratio, where a practice supplies one. Where a practice specifies that one duration stands to another in a stated proportion, as the prescriptions treated in Chapter 22 do, the proportion is invariant while the durations are not.

Dependence. That an event's occurrence is conditioned upon another's, in the sense of Chapter 3, is invariant.

Claim 63.4.1. (Invariant properties of an unreferenced field). *Order, coincidence, practice-specified ratio and dependence are invariant under reparametrisation, and a description of an unreferenced field asserting these asserts properties of the field.*

The claim identifies the vocabulary in which such fields are describable, and the vocabulary is the one Chapter 64 formalises. That the surviving properties are order, coincidence and dependence is the reason the apparatus of that chapter is built from a causal order and not from a time coordinate.

63.5 The Service Rendered and the Case Distinguished

This section states which service of Chapter 62 this chapter renders. Its objective is to record it and to exhibit the case the apparatus distinguishes.

The chapter renders the third service: it distinguishes cases that a prose description conflates.

The cases are these. Two practices may both be described as delivering a text without a regular pulse. In the first, the practice specifies proportions among durations, so that a relation among the durations is prescribed and a delivery may fail to observe it. In the second, no proportion is specified, and a delivery is assessed by the placement of events relative to one another and by nothing further.

Claim 63.5.1. (Distinction of two unreferenced cases). *An unreferenced field in which practice-specified ratios obtain and an unreferenced field in which none obtain differ in what a delivery may fail to observe, and a description in terms of the absence of a pulse supplies one term for both.*

The distinction bears upon Part III directly. Chapter 22 described a practice prescribing relative durations numerically without prescribing melody, and Chapter 16 described a practice prescribing melodic shape with durations governed by the school's transmitted practice. Both are unreferenced; they differ in the case just distinguished; and the difference is invisible to a description recording only the absence of a maintained pulse.

63.6 Summary of Results

This chapter has established the following. The distinction between referenced and unreferenced fields is the distinction between fields supplying and withholding a temporal background, which is the property licensing this Part's borrowings and which Part III documented in five traditions. A numerical coordinate assigned to an unreferenced field records the analyst's assignment, so that a description of such a field asserts nothing that changes under a transformation preserving the order of events. Descriptions assigning measured durations to unreferenced fields are accordingly excluded, and comparisons drawn between such descriptions compare the transcribers' assignments; the exclusion withdraws the principal means by which unmeasured repertoires have been made comparable. Order, coincidence, practice-specified ratio and dependence survive the requirement and constitute the vocabulary in which such fields are described, which is why the apparatus of Chapter 64 is built from a causal order. The chapter distinguishes two unreferenced cases that a description recording only the absence of a pulse conflates.

Chapter 64

A Network of Heterogeneous Parties and the Dynamics of a Musical Field

This chapter supplies the first of the two formal models of this Part. Its role is to construct a structure representing a musical field as a collection of parties of differing constitution, coupled by partial channels, evolving without a global clock. It undertakes to establish five things: that the parties of a musical field differ in the type of their states, so that a model assuming a common state space misdescribes them; that the channels coupling them are partial maps and that the partiality is essential; that couplings are themselves parties in the model, which is required by the material of Parts III and IV; that the temporal structure of the model is a causal order and not a clock, with the consequence that a field has no state at an instant; and that the model supplies a definition of emergence with a removal test, whose application to musical fields is exhibited. It proceeds in six sections.

64.1 Parties and the Refusal of a Common State Space

This section constructs the first object. Its objective is to define a party and to establish that a common state space is refused, with the ground of the refusal stated.

Definition 64.1.1. (Party). *A party in the model is a tuple comprising a set of states, a set of admissible inputs, a set of admissible emissions, an update map carrying a state and an input to a state, and an emission map carrying a state to an emission, all of them the party's own.*

Four assumptions are withheld, and each is withheld on a ground drawn from the preceding Parts.

No common state space. The parties of a musical field include performers, instruments, spaces, attending bodies and institutions. Chapter 10 included all of these, and their states are of different kinds: a performer's state includes acquired capacity in the sense of Chapter 54, an instrument's state includes its material condition, an institution's state includes its provisioning. A model assigning these to one space asserts a commensurability the subject matter does not exhibit.

No metric across parties. No distance is defined between the state of one party and the state of another.

No shared alphabet. What one party emits and what another admits are separate sets, related only by the channels of Section 2.

No restriction on the type of an update map. A party's law may be of any kind.

Claim 64.1.2. (Necessity of type heterogeneity). *The parties constituting a musical field in the sense of Chapter 10 differ in the kind of their states, so that a model representing them within a common state space asserts a commensurability the subject matter withholds.*

64.2 Channels as Partial Maps

This section constructs the coupling. Its objective is to define a channel and to establish that its partiality is essential.

Definition 64.2.1. (Channel). *A channel from one party to another is a partial map from the first party's emissions to the second party's admissible inputs.*

The partiality is the load-bearing feature. A total map would assert that everything the first party emits is admissible to the second, which is to assert a common medium between them.

Claim 64.2.2. (Essential partiality of the channel). *A channel between parties of differing constitution is a partial map, since a total map asserts that every emission of the first is admissible to the second, and the material of Parts III and IV documents parties between which this fails.*

Instances documented in this book are given. A party attending a performance admits a portion of what a performer emits. A notated specification admits a portion of what a composing party might emit, and Chapter 30 established that the portion differs by notational practice. An institution admits a portion of what a practice emits, namely what its records record.

64.3 Couplings as Parties

This section states a construction the material of this book requires. Its objective is to establish that a coupling must be admitted as a party in its own right, and to give the cases requiring it.

A coupling between parties may be represented as a channel, which carries emissions and holds no state. The representation is inadequate for the material of this book.

Claim 64.3.1. (Requirement that couplings hold state). *Couplings documented in this book possess states of their own that condition what passes through them, so that a representation of a coupling as a stateless channel misdescribes them and the coupling is admitted as a party.*

Three cases require it. A line of instruction, established in Chapter 16 as operative within the temporal organisation, has a state: what has been transmitted along it, and to whom. A

notated specification has a state: what it specifies, which alters between editions and across the specification thread of Chapter 44. An institution provisioning a practice has a state: what it provisions and on what terms.

The construction has a consequence worth stating. Where a coupling is a party, it may itself be coupled, and a field may contain couplings between couplings. The line of instruction and the notated specification are coupled in the material of Chapter 16, where the notation is held insufficient without the instruction.

64.4 Causal Order as the Temporal Structure of the Model

This section constructs the temporal structure. Its objective is to establish that the model employs a causal order, to state the consequence for the notion of a state at a time, and to connect the construction to Chapter 63.

Definition 64.4.1. (Occurrence). *An occurrence is an event at a party, comprising the admission of an input, the application of the update map, and any emission resulting.*

Definition 64.4.2. (Causal order). *The causal order of a run is the transitive closure of the relation holding between an occurrence and any occurrence admitting an emission it produced, together with the relation of succession at a single party.*

The construction employs no time coordinate, which is what Chapter 63 required for unreferenced fields, and which is available for referenced fields likewise, since a maintained reference may be represented as a party emitting periodically.

Claim 64.4.3. (Absence of a state at an instant). *A network of parties evolving under a causal order possesses no state at an instant, since no relation of simultaneity across parties is defined, and what plays the role of a state is a downward-closed set of occurrences.*

The claim is a formal statement of something the material exhibits. A performance in which parties coordinate by common acquisition, in the sense of Chapter 6, has no moment at which all parties are at a determinate common position, and its description proceeds by what has occurred and what depends upon it.

A referenced field differs, and the difference is representable. Where a party emits periodically and every other party admits its emissions, the emissions supply a common reference against which occurrences may be ordered, which is the arrangement Chapter 33 documented and which the model represents as a party and not as a background.

Claim 64.4.4. (Representation of a reference as a party). *A maintained temporal reference is represented within the model as a party emitting periodically upon channels admitting to the others, so that the presence of a background is a property of a configuration of parties and not a property of the model.*

The claim is where the apparatus renders its first service in this Part. The question whether

a field supplies a background becomes a question about its configuration, and the alteration documented in Chapter 33 becomes the addition of a party.

64.5 Emergence and the Removal Test

This section supplies a definition. Its objective is to define an emergent property of a coupled system and to exhibit its application.

Definition 64.5.1. (Invariant). *A property of a system is invariant relative to a class of perturbations where it holds of the system under every perturbation in the class.*

Definition 64.5.2. (Emergent invariant). *An invariant of a coupled system is emergent where it is not the image of any invariant of a component, nor any finite Boolean combination of such images.*

The exclusion of Boolean combinations is required. Without it, any conjunction of component invariants would count as emergent, and the definition would be satisfied trivially.

Definition 64.5.3. (Removal test). *A candidate emergent invariant is subjected to the removal test by constructing the system with a component removed and determining whether the invariant holds of the remainder.*

Claim 64.5.4. (Application of the removal test to a musical field). *Where a property of an ensemble's sounding holds under perturbation of the material performed and fails when a party is removed, the property is an invariant of the coupled system dependent upon that party, and the test distinguishes it from a property held by any party alone.*

Two cautions attach and both were established in the source of this construction. The test compares two systems, so that it establishes dependence and does not establish location. And where an invariant is inexpressible on the reduced system, the failure is of a different kind from a failure of the invariant to hold, and the two are distinguished.

The application to Part VI is direct and is the second service this Part renders. Chapter 53 reported that assessing the force of a position of confirmation requires observing the field with the occupant absent, and that documented fields do not vary their occupants. The removal test states formally what that assessment requires, and the conductorless ensembles of that chapter are the cases in which history performed it.

64.6 The Relation to Networks of Spiking Elements

This section states a relation and forestalls a misreading. Its objective is to fix the relation between the model of this chapter and a class of models in general use.

Models of networks of elements communicating by discrete events, whose elements are alike in kind and whose channels carry a common signal type, are in wide use in the study of neural and of engineered systems.

Claim 64.6.1. (Relation of the model to networks of alike elements). *A network whose elements are alike in kind, whose channels are total, and whose signals are of a common type is an instance of the class the present model specifies, and the present model is a generalisation of that class and is not an adaptation of it.*

The direction stated in the claim is the substantive point. The model is not obtained by taking a network of alike elements and modifying it for musical use; it is obtained by withholding the assumptions that make such a network a special case.

What the generalisation buys is the representation of parties of differing constitution coupled by partial channels, which the material of Parts III and IV requires. What it costs is stated: results established for networks of alike elements, including results on synchronisation and on stability, do not transfer, since their proofs employ the assumptions withheld.

64.7 Summary of Results

This chapter has established the following. A party in the model is specified by its own states, inputs, emissions, update map and emission map, and four assumptions are withheld, of which the refusal of a common state space rests upon the differing kinds of state the parties of a musical field possess. Channels are partial maps, and the partiality is essential since a total map asserts a common medium. Couplings possess states conditioning what passes through them and are accordingly admitted as parties, which the line of instruction, the notated specification and the provisioning institution require. The temporal structure is a causal order employing no time coordinate, so that a network possesses no state at an instant, and a maintained reference is represented as a party emitting periodically, which makes the presence of a background a property of a configuration. An emergent invariant is one that is not the image, nor a finite Boolean combination of images, of component invariants, and the removal test establishes dependence without establishing location. A network of alike elements coupled by total channels is an instance of the class this model specifies, and results proved under the withheld assumptions do not transfer.

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Chapter 65

The Position of Confirmation Stated as a Property of a Coupled System

This chapter applies the model of Chapter 64 to the material of Part VI. Its role is to state the claim engaged in Chapter 51 as a property of a coupled system, so that the assessment Chapter 53 could not perform is at least well posed. It undertakes to establish four things: that the position of confirmation is representable within the model as a configuration and not as a party, so that the distinction Chapter 51 required is formally available; that the claim that the position cannot stay vacant becomes a claim about reconstitution under removal, which is a determinate property; that the conditional hypothesis of Chapter 51 becomes a comparison between two configurations differing in one respect; and that stating the claim formally exhibits why the assessment failed, which is the second service of Chapter 62. It proceeds in five sections.

A restriction governs the chapter. What follows is a model in the sense of Chapter 62 together with a design, and it establishes nothing about any musical field. Whether the properties it defines obtain is an empirical question, and Chapter 53 reported that the evidence bearing upon it is scarce.

65.1 The Position Represented as a Configuration

This section supplies the representation. Its objective is to define the position of confirmation within the model and to establish that it is a configuration and not a party.

Chapter 51 distinguished a position of confirmation from whatever occupies it, and established that the separation permits occupancy to be treated as a historical and comparative question. The model represents the distinction directly.

Definition 65.1.1. (Adjudicative configuration). *A party a within a network occupies the adjudicative configuration with respect to a set of parties P where each party in P admits emissions of a upon a channel conditioning its update map, and where a admits emissions of no party in P upon a channel so conditioning its own.*

The definition states asymmetry of conditioning, and the asymmetry is what Chapter 33 identified in the arrangement it documented: an adjudicating party producing no sound is

not itself subject to the adjudication it exercises.

Claim 65.1.2. (Configurational character of the position). *The adjudicative configuration is a property of the pattern of channels within a network and not a property of any party, so that the same party may occupy it with respect to one set and fail to occupy it with respect to another, and a network may exhibit the configuration with distinct occupants at distinct times.*

The claim supplies formally what Chapter 51 required. A position separable from its occupant is a configuration, and occupancy is the assignment of a party to it.

Three occupants documented in Part VI are representable. A party producing no sound and emitting a reference occupies it (Chapter 33). A notated specification, admitted as a party under the construction of Chapter 64, occupies it where parties condition their updates upon it and it conditions its own upon none of theirs (Chapter 52). A line of instruction occupies it in the same manner, and its emissions are what has been transmitted along it.

65.2 Vacancy and Reconstitution

This section treats the claim that the position cannot stay vacant. Its objective is to render it a determinate property of the model.

Definition 65.2.1. (Vacancy). *An adjudicative configuration is vacant within a network where no party stands in the relation of Definition 65.1 to the remaining parties.*

Definition 65.2.2. (Reconstitution). *A network reconstitutes an adjudicative configuration where, from a state in which the configuration is vacant, the network's evolution yields a state in which some party occupies it.*

The claim engaged in Chapter 51 becomes, under these definitions, the claim that networks of a certain class reconstitute the configuration when it is vacated.

Claim 65.2.3. (Determinacy of the reconstitution claim). *The claim that a position of confirmation cannot remain vacant is, within the model, the claim that networks of a specified class reconstitute the adjudicative configuration following its vacation, which is a determinate property of a class of networks and is established or refuted by exhibiting the class.*

The claim renders the first service of Chapter 62: a question posed loosely in the prose of Part VI is posed precisely here. It renders no further service, since the model supplies no ground for holding that any particular class of networks possesses the property.

Two observations bear on what would establish it. Reconstitution is a property of a network together with the laws of its parties, and the laws of the parties in any design of a musical field are supplied by the design and are not derived. And a network may reconstitute the configuration with an occupant of a different kind from the one vacated, which is what the historical material of Chapter 51 reports for the succession of occupants.

65.3 The Conditional Hypothesis as a Comparison of Configurations

This section treats the hypothesis of Chapter 51. Its objective is to state it within the model and to identify the quantity it concerns.

The hypothesis asserts that the organising force exerted by a position of confirmation varies with the availability of reciprocal confirmation among parties.

Definition 65.3.1. (Reciprocal conditioning). *Two parties stand in reciprocal conditioning where each admits emissions of the other upon a channel conditioning its update map.*

The hypothesis compares two configurations: one in which the parties of P stand in reciprocal conditioning with one another, and one in which they stand in such conditioning with a alone.

Claim 65.3.2. (Formulation of the conditional hypothesis). *The conditional hypothesis of Chapter 51 asserts that the difference made to the parties of P by the occupancy of the adjudicative configuration is greater where the parties of P stand in no reciprocal conditioning with one another, and the difference so made is assessed by the removal test of Chapter 64.*

The formulation identifies the quantity at issue, which the prose of Part VI did not. The quantity is the difference the occupant makes, and the removal test is what assesses it.

65.4 Why the Assessment Failed

This section renders the second service of Chapter 62. Its objective is to establish, from the formulation, why the assessment of Chapter 53 could not be performed.

The removal test requires the system with a component removed. Assessing the difference made by an occupant accordingly requires the network in two conditions, with the occupant and without it.

Claim 65.4.1. (Formal statement of the obstacle). *Assessment of the difference made by an occupant of the adjudicative configuration requires observation of a network in two conditions differing in that occupancy, and a network observed in one condition supplies no value of the quantity, however completely it is documented.*

The claim states formally what Chapter 53 reported empirically, and it adds something the prose statement lacked. The prose reported that documented fields do not vary their occupants; the formal statement establishes that no quantity of documentation of the unvaried case supplies what the assessment needs, since the quantity is a difference between conditions.

A consequence follows for the standing of the evidence. Complete documentation of a tradition maintaining a single arrangement is evidence about that arrangement and is not partial evidence about the quantity the hypothesis concerns. The two are not related as more and less.

65.5 The Design and Its Limits

This section supplies the design required by Chapter 62 and states its limits. Its objective is to record what the assignment asserts and where it is underdetermined.

The design assigns the model as follows. Parties are performers, attending parties, notated specifications, lines of instruction and provisioning institutions. Channels are the audible, visible and documentary means by which the emissions of one reach another. The adjudicative configuration is occupied by whatever party satisfies Definition 65.1, which Chapter 52 identified by three tests.

Three limits are recorded.

The update maps of the parties are supplied by the design and are not derived, and nothing in this book determines them. A design assigning different laws yields different reconstitution properties.

The channels are assigned by the design, and whether a party's update is in fact conditioned upon another's emissions is an empirical question the design answers by stipulation.

And the design is constructible for the cases assembled in this book and its constructibility for observed cases is untested, which is the third condition of Chapter 62 under which the apparatus is weakened. Chapter 69 returns to it.

65.6 Summary of Results

This chapter has established the following. The position of confirmation is representable as a configuration of channels exhibiting asymmetry of conditioning, so that it is a property of a pattern and not of a party, and the separation Chapter 51 required is formally available; three occupants documented in Part VI are representable under it. The claim that the position cannot remain vacant becomes the claim that networks of a specified class reconstitute the configuration following its vacation, which is determinate and is established by exhibiting the class. The conditional hypothesis becomes a comparison between configurations differing in whether the parties stand in reciprocal conditioning, and the quantity it concerns is the difference made by the occupant, assessed by the removal test. Assessment of that quantity requires a network observed in two conditions, so that documentation of an unvaried arrangement supplies no value of it however complete, which states formally why the assessment of Chapter 53 could not be performed. The design is supplied, and its update maps and channels are assigned by stipulation.

Chapter 66

Histories of a Musical Field and the Structure Representing Their Internal Change

This chapter supplies the second of the two formal models of this Part. Its role is to construct a structure representing not the states a field passes through but the internal structure of the changes between them. It undertakes to establish five things: that a record of states and transitions fails to distinguish changes the subject matter distinguishes, which is the ground for a second model; that a state is represented as a graph whose edges are the persisting elements and whose nodes are the couplings among them, and that the assignment is forced by a dimensional consideration; that a history is a two-complex whose faces are the persistences of elements and whose vertices are the events at which couplings rearrange; that musical events sort into a small number of vertex types; and that the structure distinguishes histories a transition record identifies. It proceeds in six sections.

66.1 The Inadequacy of a Record of Transitions

This section states the ground for a second model. Its objective is to establish that a record of states and transitions between them fails to represent a distinction the material requires.

A field may be recorded by a sequence of states with transitions between them, and such a record supports the statement that the field passed from one state to another.

Claim 66.1.1. (Indistinguishability of internally distinct changes in a transition record).

Two changes carrying a field from the same initial state to the same final state are indistinguishable in a record of states and transitions, and the material of this book requires them to be distinguished.

The requirement is exhibited by a case from Part III. Chapter 21 established that the accents of a text determine both its syntactic division and its melodic figures. Two deliveries of one verse may terminate alike and differ in whether a given word was delivered as continuing its clause or as concluding it. The initial and final states of the delivery coincide; what differs is which couplings obtained during it.

A second case is supplied by Chapter 30. Two realisations of one figured bass may sound the same combinations at the same points and differ in which voice moved to which, so that the dependences among the sounding events differ while the sequence of combinations

agrees.

66.2 States as Graphs and the Assignment of Elements to Edges

This section constructs the state. Its objective is to define it and to establish that the assignment of elements to edges and couplings to nodes is forced.

Definition 66.2.1. (State). *A state is a graph together with an incidence relation, in which the edges are the elements present and the nodes are the couplings obtaining among them, each node being the junction at which the elements incident to it stand in relation.*

The assignment inverts what is natural at first consideration, on which elements would be nodes and couplings edges. The inversion is forced by the dimensional consideration governing Section 3.

Claim 66.2.2. (Necessity of the inversion). *Where a persisting element must sweep a two-dimensional face and a persisting coupling a one-dimensional edge, the elements are the edges of a state graph and the couplings its nodes, since the alternative assignment would make a coupling the more persistent object.*

The claim states a formal necessity and it corresponds to a fact about the subject matter. In a musical field the elements are the sounding materials, which persist; the couplings are the relations among them, which are made and unmade. A sounded pitch continues while the relations in which it stands are established and dissolved around it, and the structure must make the first the more persistent object.

An incidence condition is required for the correspondence to be exact, and it is recorded: each element stands in at most two couplings. The condition is restrictive and its cost is stated in Chapter 69.

66.3 Histories as Two-Complexes

This section constructs the history. Its objective is to define it and to state what its strata represent.

Definition 66.3.1. (History). *A history is a two-complex whose faces are the persistences of elements, whose edges are the persistences of couplings, and whose vertices are the events at which couplings are created and destroyed.*

Definition 66.3.2. (Boundary). *The boundary of a history is a state, in the sense of Definition 66.2.*

That the boundary of a history is a state is what joins the two models of this Part into one apparatus, and Chapter 69 states the correspondence.

Definition 66.3.3. (Residues of a vertex). *At a vertex, the created couplings are those present in the outgoing boundary and in no incoming boundary, and the destroyed couplings are those present in*

an incoming boundary and in no outgoing boundary.

The residues are what the structure supplies and a transition record does not. They state what a change consisted in, distinctly from what it began and ended with.

Claim 66.3.4. (Distinction of histories sharing endpoints). *Histories with identical initial and final boundaries may differ in their residues, so that the structure distinguishes changes a record of states and transitions identifies, which is the requirement of Section 1.*

66.4 Vertex Types for Musical Events

This section supplies the design for the musical case. Its objective is to enumerate the kinds of vertex a musical history exhibits and to state what each rearranges.

Five types are distinguished for the design of this book.

Entry. An element is introduced, and couplings are created between it and elements present. Nothing is destroyed.

Cessation. An element terminates, and the couplings incident to it are destroyed.

Rearrangement. Elements persist and the couplings among them are exchanged, so that both residues are non-empty and the set of elements is unchanged. The type is the one a record of pitches present cannot detect.

Realization. An element specified in a fixed layer is instantiated, and couplings are created between the instantiating element and those present. The type belongs to the arrangements assembled in Chapter 44 and represents the act a realising performer performs.

Articulation. A coupling is created whose effect is to divide what precedes from what follows, so that elements on either side stand in no coupling across it. The type represents the cadential and sectional events of the practices treated in Part IV, and the delimiting events treated in Part III.

Claim 66.4.1. (Sufficiency of the five types for the designs of this book). *The vertex types of entry, cessation, rearrangement, realization and articulation suffice to represent the events described in the designs supplied in this book, and no event described in Parts III and IV requires a sixth.*

The claim is stated for the designs supplied and not generally. That a sixth type is required for material this book has not treated is likely and is not in question here.

66.5 Gluing and the Composition of Histories

This section states how histories combine. Its objective is to define composition and to record what it supplies and what it withholds.

Definition 66.5.1. (Composition). *Two histories compose where the outgoing boundary of the first and the incoming boundary of the second are isomorphic under a chosen correspondence, and the com-*

posite is formed by identifying them.

Composition supplies the representation of a performance assembled from movements, of a rite assembled from stages, and of a tradition's practice assembled from occasions.

Two matters are recorded.

Definition 66.5.2. (Identity history). *An identity history has isomorphic boundaries and no vertices, and represents an interval in which elements persist and no coupling is created or destroyed.*

The construction states formally that the passing of time is not itself an event, which is what an event-based model of the kind fixed in Chapter 64 requires.

And the requirement of isomorphism is demanding. Boundaries met in practice are similar and not isomorphic: the state at the close of one occasion and the state at the opening of the next resemble one another and differ. Composition accordingly requires an intermediate history the apparatus does not construct, and the requirement is the formal form of a claim the book has made in prose, that continuation is reconstruction.

Claim 66.5.3. (Formal expression of continuation as reconstruction). *Where the boundaries of two histories are similar and not isomorphic, their composition requires an intervening history relating them, so that the continuation of a practice across occasions is represented as a construction and not as an identification.*

66.6 The Services Rendered

This section records which services of Chapter 62 this chapter renders.

The chapter renders the third service, distinguishing cases prose conflates: the residues of Definition 66.4 distinguish histories that a record of states identifies, and the rearrangement vertex type distinguishes an event that a record of elements present cannot detect.

It renders the second service, establishing a limitation: the incidence condition of Section 2 restricts the states representable, and the isomorphism requirement of Section 5 establishes that composition across occasions requires a construction.

It renders the first service in one respect, and the respect is recorded in Chapter 68, where the question of realization is posed in terms of the boundaries defined here.

66.7 Summary of Results

This chapter has established the following. A record of states and transitions fails to distinguish changes carrying a field between the same endpoints by different internal routes, and the material of Parts III and IV requires them distinguished. A state is a graph whose edges are the elements present and whose nodes are the couplings among them, and the assignment is forced by the requirement that a persisting element be the more persistent object; the correspondence requires an incidence condition whose cost is recorded. A history is a two-complex

whose faces are element persistences, whose edges are coupling persistences and whose vertices are the events at which couplings rearrange, and its boundary is a state, which joins the two models into one apparatus. Five vertex types suffice for the designs supplied here, among them a rearrangement type that a record of elements present cannot detect. Composition requires isomorphic boundaries, identity histories state that the passing of time is not an event, and the failure of boundaries met in practice to be isomorphic expresses formally the claim that continuation is reconstruction.

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Chapter 67

Generation of a Space of Histories and the Accounting of a Refused Component

This chapter treats the reading under which the histories of Chapter 66 are generated by a construction, and it renders the full accounting of the component this Part declines. Its role is to state what the field-theoretic apparatus offers an account of the kind attempted here, and to state precisely what its declined component would have supplied. It undertakes to establish four things: that a generative presentation of a space of histories differs from an enumeration of that space in a respect the account requires; that the component supplying weights is what makes the borrowed apparatus a theory in its own field, and that its refusal leaves a structure of a determinate and lesser kind; that the refusal follows from a commitment of this book and admits of a formal statement; and that one further component suggests a question about common practice which this book poses and leaves open. It proceeds in five sections.

67.1 Generation Distinguished From Enumeration

This section states the distinction. Its objective is to establish that a generative presentation differs from an enumeration in a respect bearing on this book's account.

A space of histories may be presented in two ways. It may be enumerated, by specifying the histories admitted and exhibiting them. Or it may be generated, by specifying a construction whose products are the histories admitted, so that the space is given by the construction and its members are obtained by applying it.

Claim 67.1.1. (Difference bearing on the account). *An enumeration of a space of histories presupposes that the space is surveyable in advance of the histories occurring, and a generative presentation presupposes only a construction, so that a space whose members are not surveyable in advance admits a generative presentation and admits no enumeration.*

The claim identifies why the distinction matters here. Chapter 45 established that the relations in which an event stands remain open while a field unfolds, and Chapter 46 extended the openness to identity. A space of histories for such a field is not surveyable in advance, and a presentation requiring that it be surveyed is unavailable.

The field-theoretic apparatus supplies a generative presentation, in which the combinato-

rial objects are produced by an expansion of a functional and are not posited. That property is what recommends it, and it is the only property this chapter claims for it.

67.2 The Declined Component and What It Supplies

This section states what is declined. Its objective is to identify the component precisely and to state what it supplies in its own field, so that its absence here may be assessed.

The apparatus assigns to each history produced by the expansion a weight, and the weights are combined to yield quantities that the theory compares with observation. The weights are what raise the apparatus above a catalogue of combinatorial objects.

Claim 67.2.1. (Character of the structure remaining after the refusal). *A generative presentation of a space of histories without weights specifies which histories the construction produces and supplies no ordering, no comparison and no selection among them, so that it represents what may occur and represents nothing about what does.*

The claim is the accounting Chapter 62 promised. What remains after the refusal is a combinatorial structure with a generative presentation, and its use is confined to the three services fixed there.

Two consequences for this book are recorded.

The question of realization treated in Chapter 68 is posed as a question about which realizations a boundary admits, and cannot be posed as a question about which are likely. Chapter 14 documented that traditions themselves distinguish realizations by lineage and locality, which is a distinction among admitted realizations and not a weighting of them.

And the account supplies no formal expression of the fact that some realizations are encountered constantly and others rarely. That fact is documented throughout Parts III and IV, and this Part represents it not at all.

67.3 The Formal Statement of the Refusal

This section states the ground formally. Its objective is to give the commitment from which the refusal follows and to establish that the tension is internal to the position and is not a technical difficulty.

Claim 67.3.1. (Presupposition of a weighting). *A weight assigned to a history is interpretable where the histories weighted are drawn from a class whose members are alternatives to one another under conditions held fixed, and a weighting presupposes accordingly that such a class and such conditions are specifiable.*

Claim 67.3.2. (Commitment of the account). *The account of this book holds that the conditions under which a musical practice is realised are historically produced, so that the conditions obtaining at one occasion are the product of what preceded it, and a class of alternatives under fixed conditions is*

accordingly available for a constructed case and withheld for an observed one.

The two claims together state the tension. It is not that a weighting is difficult to supply; it is that supplying one requires a specification of fixed conditions which the account holds to be unavailable for observed cases.

Claim 67.3.3. (Internality of the tension). *The absence of a weighting in this Part follows from a commitment of the account and not from a technical difficulty, so that supplying one would require the commitment to be revised.*

The claim is stated because it identifies what the formal work exposed. In prose the account's historicism and its interest in what is likely coexisted without evident conflict; the requirement of a formal apparatus made the conflict explicit.

67.4 The Condensate Question

This section states a question the apparatus raises. Its objective is to state it and to record that this book poses it and leaves it open.

The apparatus supplies, in its own field, a reading on which a continuum is recovered as a collective description of very many densely coupled objects, valid within a regime and invalid outside it, so that what appears as a stage is exhibited as a phase.

Claim 67.4.1. (Availability of an analogous question). *Whether a common space of musical meanings could be recovered as a collective description of very many densely coupled parties, valid within a regime and unavailable outside it, is a question the apparatus of this Part makes statable and does not answer.*

The question bears on a commitment of this book, and the bearing is stated because it is substantial. Chapter 64 refused a common state space across parties, and the refusal is what licenses the borrowing of Chapter 62. A positive answer to the present question would reconcile that refusal with the usefulness of talk about a common practice: the common practice would be a description valid within a regime, and the refusal would hold at the level of the parties.

The question is not answered here, and the reason is stated. Answering it requires the dynamics that Section 3 established this Part withholds.

67.5 The Services Rendered and the Standing of the Chapter

This section records the services and states what the chapter claims.

The chapter renders the second service of Chapter 62: it establishes a limitation, by exhibiting that the structure available under this Part's commitments represents what may occur and nothing about what does.

It renders the first service in one respect: the condensate question of Section 4 is posed

precisely and was unstatable in the prose of the preceding Parts.

It claims no third service and offers no design of its own; the designs supplied in this Part belong to Chapters 65, 68 and 69.

Claim 67.5.1. (Standing of the field-theoretic reading in this book). *The field-theoretic reading supplies a generative presentation of a space of histories and supplies no weighting, and its contribution to this book is the exhibition of a limitation together with the statement of one open question.*

The claim is modest and is stated as such. A reader expecting the apparatus to supply predictive content will find none, and the ground of its absence is the account's own commitment.

67.6 Summary of Results

This chapter has established the following. A generative presentation of a space of histories presupposes a construction where an enumeration presupposes surveyability, so that a space whose members are not surveyable in advance admits the first and not the second; this is what recommends the apparatus and is the only property claimed for it. The weights the apparatus assigns are what make it a theory in its own field, and the structure remaining after their refusal represents what may occur and nothing about what does, with the consequence that the question of realization is posed as admissibility and never as likelihood. A weighting presupposes a class of alternatives under fixed conditions, the account holds the conditions of realisation to be historically produced, and the tension between them is internal to the position and would require the commitment to be revised. Whether a common space of musical meanings could be recovered as a collective description valid within a regime is a question the apparatus makes statable and this book leaves open.

Chapter 68

Fixed Boundaries, Admitted Realizations, and the Recoverability of a Configuration

This chapter treats formally the arrangement that recurs across this book and the question the book has carried since Chapter 4. Its role is to state the fixed-and-variable arrangement in the apparatus of Chapter 66, and to determine under what conditions a realization determines the configuration that produced it. It undertakes to establish five things: that the arrangement is stated as a boundary condition together with the histories it admits; that four instances documented in this book fall under the statement, of which one inverts the assignment; that admissibility is constrained by conditions the practice supplies, which is the substitute this Part offers for a weighting; that the identifiability question is answerable in the negative for the documented cases, and that the negative answer is a theorem about the arrangement and not a report about the evidence; and that a positive condition is statable and is not satisfied by the cases treated here. It proceeds in six sections.

68.1 The Arrangement Stated Formally

This section states the arrangement. Its objective is to give it in the apparatus of Chapter 66.

Definition 68.1.1. (Boundary condition). *A boundary condition is a state, in the sense of Definition 66.2, together with a specification of which of its elements and couplings are fixed across all histories under consideration.*

Definition 68.1.2. (Admitted realization). *A history is an admitted realization of a boundary condition where its boundary agrees with that condition on the fixed elements and couplings, and where it satisfies the further constraints the practice supplies.*

The fixed layer of the practices treated throughout this book is the boundary condition; the variable layer is the history admitted.

Claim 68.1.3. (Statement of the recurrent arrangement). *The fixed-and-variable arrangement documented in this book is stated as a boundary condition together with the class of histories admitting it, so that what a practice transmits is the condition and what a performance supplies is a member of the class.*

68.2 The Four Documented Instances

This section exhibits the instances. Its objective is to state what occupies the boundary and what occupies the class in each of four cases documented in this book.

Liturgical text with lineage realization (Chapter 14). The boundary comprises the verbal elements and their order, fixed by written transmission. The class comprises the deliveries a lineage admits.

Notation determining melodic figures (Chapter 21). The boundary comprises the verbal elements together with couplings determined by the signs, since the signs fix the syntactic division. The class comprises the community-specific melodic realizations.

Figured bass (Chapter 30). The boundary comprises the bass elements and the couplings the figures specify, and the specification of couplings without the elements realising them is what Chapter 30 identified as distinctive. The class comprises the realizations a performer supplies.

Fixed tune with composed text (Chapter 40). The boundary comprises the melodic elements and their couplings; the class comprises the texts composed to them.

Claim 68.2.1. (Inversion representable within the statement). *The four instances differ in which constituents of a state the boundary fixes, and the fourth fixes the melodic constituents where the first three fix the verbal ones, so that the inversion established in Chapter 40 is a difference in the boundary condition and not a difference of arrangement.*

The claim renders the third service of Chapter 62 and renders it usefully. In prose, the tune-title practice appeared to reverse an arrangement; formally it instantiates the same arrangement with a differently specified boundary.

68.3 Constraint of the Admitted Class

This section treats the substitute for a weighting. Its objective is to state how the class of admitted realizations is constrained by conditions the practice supplies.

Chapter 67 established that this Part supplies no weighting. What it supplies is a narrowing of the admitted class by constraints, and the constraints are those the practices themselves impose.

Three classes of constraint are documented in this book.

Transmission constraints. Where a practice transmits realizations by instruction, the admitted class for a party is what that party's line of instruction supplies, which Chapter 16 established as operative.

Environmental constraints. Where the elements of the boundary carry properties the local speech or the local instrumentarium constrains, the class is narrowed accordingly, which Chapter 14 identified as a candidate mechanism and Chapter 21 supplied evidence for.

Institutional constraints. Where an institution adjudicates correctness, the admitted class is what that institution admits, which Chapter 43 documented.

Claim 68.3.1. (Narrowing without ordering). *The constraints a practice supplies narrow the class of admitted realizations and impose no ordering upon the members of the narrowed class, so that the apparatus distinguishes admitted from excluded and distinguishes no admitted realization from another.*

68.4 The Identifiability Question and Its Answer

This section answers the question the book has carried since Chapter 4. Its objective is to state it formally and to establish the answer for the documented cases.

Definition 68.4.1. (Recoverability). *A boundary condition is recoverable from a realization where the realization is an admitted realization of that condition and of no other.*

The question of Chapter 4 is whether a relational configuration is recoverable from a musical organisation, and the present definition states it for the arrangement of Section 1.

Claim 68.4.2. (Non-recoverability for the documented cases). *In each of the four instances of Section 2, distinct boundary conditions admit a common realization, so that the boundary is not recoverable from a realization, and the non-recoverability follows from the documented divergence of realizations and requires no further evidence.*

The argument is direct and is stated. Chapter 26 established that one boundary admits materially divergent realizations. Where the admitted classes of two boundary conditions intersect, a realization in the intersection is admitted by both, and recoverability fails. Part III documented traditions whose realizations of distinct texts share extensive material, since the melodic material of a tradition is deployed across its repertory, so the intersections are non-empty.

Claim 68.4.3. (Character of the negative result). *The failure of recoverability for these cases is a consequence of the structure of the arrangement together with the documented deployment of common melodic material across a repertory, and it would obtain however complete the evidence about any single realization became.*

The claim identifies what the formal statement adds to the prose of Chapter 4. There the inverse inference was declined on the ground that multiple realisation is its defeater and that the defeater obtains in the cases examined. Here the failure is exhibited as a property of the arrangement, so that it is not remediable by better documentation.

68.5 The Condition Under Which Recovery Would Be Available

This section states the positive condition. Its objective is to identify what would make a boundary recoverable and to determine whether the cases satisfy it.

Claim 68.5.1. (Sufficient condition for recoverability). *A boundary condition is recoverable from a realization where the constraints narrowing its admitted class are such that the class intersects the admitted class of no other boundary condition under consideration, which obtains where the constraints are severe relative to the range of conditions compared.*

Two arrangements documented in this book approach the condition and neither satisfies it.

The permutational recitation of Chapter 23 constrains its admitted class very severely, since the formats determine the sequence of a realization. The constraint bears upon the relation between a text and its delivery, and the boundary conditions compared are texts, which the delivery does recover. The case accordingly satisfies the condition for a narrow question and supplies nothing for the question of Chapter 4, which concerns relational configurations and not texts.

The notational determination of Chapter 21 constrains melodic figures at the level of the word. The constraint likewise recovers the signs from a delivery within a community and does not recover the community's relational configuration, since Chapter 21 documented that communities sharing the signs diverge.

Claim 68.5.2. (Failure of the condition for the question at issue). *The arrangements whose constraints are severe enough to approach recoverability recover a text or a notation from a delivery, and none of the cases documented in this book recovers a relational configuration from a musical organisation.*

68.6 What the Chapter Establishes About Tradition

This section states a consequence. Its objective is to record what the formal treatment implies about the object the traditions of Part III maintain.

A tradition maintaining a boundary condition together with constraints upon its admitted class maintains a class of realizations and no member of it.

Claim 68.6.1. (Character of a maintained tradition). *Where a practice transmits a boundary condition and constraints narrowing the realizations admitted, what the practice maintains is the condition together with the constraints, and the realizations encountered are members of a class none of which the practice determines.*

The claim states in the apparatus what Chapter 14 reported of the material: that a tradition identifies its realization by lineage, that lineages diverge, and that the identification is of a family. Chapter 39 established that a documented transmission leaves open what was preserved, and the present claim states what may be preserved: a boundary condition and a set of constraints.

68.7 Summary of Results

This chapter has established the following. The fixed-and-variable arrangement is stated as a boundary condition together with the class of histories admitting it, and four documented instances fall under the statement, of which the inversion established in Chapter 40 is a difference in which constituents the boundary fixes. The admitted class is narrowed by transmission, environmental and institutional constraints, which narrow without ordering, and this is the substitute the Part offers for a weighting. A boundary is recoverable from a realization where the realization admits no other boundary, and recoverability fails for all four documented instances, the failure being a property of the arrangement together with the deployment of common melodic material and accordingly not remediable by better documentation. The arrangements whose constraints approach severity recover a text or a notation from a delivery and recover no relational configuration. What a tradition maintains is a boundary condition together with constraints, and the realizations encountered are members of a class none of which the practice determines.

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Chapter 69

The Correspondence Between the Two Models and the Limits of the Apparatus

This chapter closes Part VIII. Its role is to state the relation between the two models constructed here, to supply the design the Part owes, and to report the standing of the apparatus against the conditions fixed in Chapter 62. It undertakes to establish four things: that a run of a network induces a history at each party, and that the induction respects composition, which makes the relation a correspondence and not a resemblance; that the correspondence loses one thing and gains another, both storable; that the embedding hypothesis of Chapter 4 is formulable within the apparatus, and that its formulation exhibits what an assessment would require; and that the apparatus stands in a determinate condition against the three abandonment conditions of Chapter 62. It proceeds in six sections.

69.1 The History Induced at a Party

This section constructs the correspondence. Its objective is to define the history a run induces at a party and to state the extra data the construction requires.

Requirement 69.1.1. (Data required by the correspondence). *The construction of a history from a run requires, beyond the network and the run, a reconstruction map for each party carrying its state to a relational graph, and an identification of elements across the states so obtained.*

The reconstruction map is what a party makes of its state, in the sense Chapter 64 recorded as not observable. The identification of elements across states is what licenses saying that an element present at one occurrence is the same element present at another.

Definition 69.1.2. (Induced history). *The history induced at a party by a run has as its vertices the occurrences at that party, and as the boundaries of its vertices the relational graphs obtained by applying the party's reconstruction map to its states before and after each occurrence.*

Claim 69.1.3. (Respect for composition). *Concatenation of two runs induces at a party the composition, in the sense of Chapter 66, of the histories the runs induce separately, so that the construction carries the structure of runs to the structure of histories.*

The claim is what makes the relation a correspondence. Two apparatus resembling one

another supply two descriptions; two apparatus related by a construction respecting composition supply one description with two presentations.

69.2 What Is Lost and What Is Gained

This section states the character of the correspondence. Its objective is to identify what the induced history omits and what it supplies that the run does not.

What is lost is the network. A history induced at a party records what that party's states were and how they changed, and records nothing of the other parties, of the channels, or of the propagation by which the party's inputs arrived.

What is gained are the residues of Chapter 66. A run records that a party's state changed; the induced history records which couplings were created and which destroyed in the change, and these are not recoverable from the run alone.

Claim 69.2.1. (Complementarity of the two models). *The network model represents the propagation among parties and omits the internal structure of a party's changes, and the history model represents the internal structure of the changes at a party and omits the propagation, so that the two are complementary and neither is derivable from the other.*

The claim states why this Part supplies two models where one would be preferable. It also records a limitation: no single structure in this book satisfies both requirements, and Section 6 carries the matter to the open problems.

A second limitation is recorded. The construction produces a history per party, and no construction of a history of the whole network is supplied. Whether one is available is open.

69.3 The Design for the Musical Case

This section supplies the design the Part owes under Chapter 62. Its objective is to give the assignment and to state what it asserts.

The design assigns as follows. Parties are performers, attending parties, instruments, spaces, notated specifications, lines of instruction and provisioning institutions. Channels are the audible, visible and documentary means by which emissions reach. Elements are the sounding materials of a practice, and couplings are the relations among them in the sense of Chapter 3. Reconstruction maps carry a party's state to the relational graph that party's conduct exhibits.

Three assertions follow from the assignment, and they are the design's content.

A party's knowledge of a field, so far as this apparatus represents it, is the set of couplings surviving in that party's reconstruction under every perturbation the design admits. A coupling appearing under one perturbation and vanishing under another was a reading.

Shared musical knowledge is a coupling that several parties each reconstruct. It is weaker than agreement, since the parties reconstruct separately and no comparison across them is

available within the apparatus.

And a party's acquisition, in the sense of Chapter 54, is an alteration of that party's update map, so that the party thereafter enters dependences it could not enter before.

Claim 69.3.1. (Weakness of the available notion of shared knowledge). *Within an apparatus refusing a common state space, the strongest available notion of shared musical knowledge is a coupling that several parties each reconstruct, and no notion of agreement across parties is definable.*

The claim records a cost of the refusal that licensed the borrowings, and the cost is substantial. Much of what is said about musical understanding presupposes comparison across parties, and the apparatus supplies none.

69.4 The Embedding Hypothesis Formulated

This section formulates the book's central hypothesis within the apparatus. Its objective is to state it and to exhibit what an assessment would require.

Chapter 4 distinguished external from internal operation and located the hypothesis in the second.

Definition 69.4.1. (Embedding map). *An embedding map is a partial map from the couplings of a relational configuration obtaining among parties to the couplings obtaining among the elements of a sounding organisation.*

Claim 69.4.2. (Formulation of internal operation). *A relational configuration operates internally within a musical practice where an alteration of a coupling in the configuration alters, through the embedding map, a coupling among the elements of the sounding organisation, and the operation is exhibited by cases in which the configuration differs and the sounding couplings differ correspondingly.*

The formulation exhibits what an assessment requires, and the exhibition is the chapter's service. An assessment requires configurations differing in a specified coupling, sounding organisations obtained under each, and a determination of the sounding couplings in each. The third requirement is the demanding one, since Chapter 66 established that sounding couplings are not recoverable from a record of elements present.

The five channels of internal operation reported in Chapter 26 are representable under the formulation, and their differences are differences in what the altered coupling is. In the first the altered coupling is a physical condition of collective sounding; in the second an institutional condition of acquisition; in the third and fourth a commitment concerning the material sounded; in the fifth a restriction upon material resource.

69.5 The Standing of the Apparatus Against Its Abandonment Conditions

This section reports against Chapter 62. Its objective is to state the apparatus's condition on each of the three conditions fixed there.

The first condition was that the apparatus is defeated where a formalism presupposing a common space of musical relations is exhibited which nonetheless represents the distinctions the account requires. No such formalism has been exhibited here, and the condition is not satisfied. The condition remains live, and the condensate question of Chapter 67 bears upon it.

The second condition was that the apparatus is defeated where its structures render none of the three services for any question the book raises. Services have been rendered and recorded: questions posed precisely in Chapters 65 and 68, limitations established in Chapters 63, 67 and 68, and cases distinguished in Chapters 63, 66 and 68. The condition is not satisfied.

The third condition was that the apparatus is weakened where the designs prove constructible only for cases assembled for the purpose. The report is unfavourable.

Claim 69.5.1. (Standing on the third condition). *The designs supplied in this Part are constructible for the cases described in this book because the descriptions supply the parties, the channels and the elements by stipulation, and no design has been constructed from an independent observation of a musical field, so that the apparatus stands in the weakened condition Chapter 62 anticipated.*

The claim is the Part's principal self-assessment and it is unfavourable. What would remove the weakening is stated: a design constructed from observation, in which the parties and channels are identified from the field and not assigned, and in which the reconstruction maps are constrained by conduct.

69.6 Open Problems

This section states what the apparatus leaves open. Its objective is to list the problems so that the final chapter may take them up with the others.

Five problems are internal to the apparatus. A weighting over histories, refused on the ground stated in Chapter 67. A history of a whole network, which Section 2 recorded as unavailable. A relaxation of the incidence condition of Chapter 66. A unification of the two models, which Section 2 established is unavailable within this book. And the decidability of the closure conditions upon which the network model's composition depends.

Three await a design constructed from observation. The identification of elements across states, which Section 1 requires and which a design supplies by stipulation. The determination of an admissible perturbation class for an observed field. And the comparison of designs constructed by different analysts of one field.

One is speculative and is the condensate question of Chapter 67.

69.7 Summary of Results

This chapter has established the following. A run induces a history at each party, given a reconstruction map and an identification of elements, and the induction respects composi-

tion, which makes the relation a correspondence and not a resemblance. The induced history loses the network and gains the residues, so that the two models are complementary and neither is derivable from the other; no single structure satisfying both requirements is supplied, and no history of a whole network is constructed. The design assigns parties, channels, elements and reconstruction maps for the musical case, and within it the strongest available notion of shared musical knowledge is a coupling several parties each reconstruct, which is weaker than agreement. The embedding hypothesis is formulated as an alteration transmitted by a partial map from configuration couplings to sounding couplings, and its assessment requires a determination of sounding couplings which a record of elements present does not supply. Against the three abandonment conditions, the first two are unsatisfied and the third places the apparatus in a weakened condition, since no design has been constructed from an independent observation of a musical field.

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Part IX

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Chapter 70

The Outcomes of the Investigation and the State in Which It Leaves Its Question

This chapter closes the book. Its role is to report what the investigation established, what it withdrew, and what it leaves open, against the undertakings entered at its opening. It undertakes to establish four things: the standing of each of the four movements of the question stated in Chapter 1; the verdict upon each of the three integrative connections claimed in Chapter 2; the claims the investigation has withdrawn or narrowed, assembled in one place; and the defects the framework disclosed through its own application. It proceeds in six sections.

The chapter reports and does not argue. Every result stated here was established in the chapter cited beside it, and the reader who disputes a result should dispute it there.

70.1 The Four Movements and Their Standing

This section reports on the question. Its objective is to state the standing of each movement.

The first movement, concerning the emergence of musical organisation from relational fields, is delivered in part and its principal result is negative. Part III established that a fixed verbal text with its fixed prescriptive apparatus receives materially divergent sounding realisations across three unrelated traditions (Chapter 26), and Part IV extended the result to a secular and commercially provisioned setting (Chapter 41) and to a fourth arrangement whose fixed layer is melodic (Chapter 40). Five channels by which a relational commitment enters the internal organisation of sounding were established (Chapter 25). What was not established is the positive claim the movement invites: no case was found in which a relational configuration determines a sounding organisation.

The second movement, concerning existence and being, is delivered as an application, and the extent of what it inherits is greater than the drafting of it suggested. Chapter 46 concedes that its ontological position is process-philosophical in general form, that its central claim about a completed course is anticipated in substance by an existing account of meter, and that it advances no criterion of work-identity and settles nothing in the analytic debate on that question. Chapter 47 dismantled the coupling hypothesis component by component, retaining it as a hypothesis and withholding the language of levels from the book's descrip-

tions.

The third movement, concerning the formation of subjects, is delivered as a formulation and not as a result. Chapter 51 proposed a conditional amendment to an existing account, Chapter 52 identified its occupants in documented fields, and Chapter 53 reported that the assessment could not be performed. Chapter 65 established why: the quantity at issue is a difference between conditions, and documented fields do not vary the condition.

The fourth movement, concerning the development of a society's other relational systems, is substantially unfulfilled, and Chapter 61 reported it as such. No case was established in which a relational arrangement passed from a musical practice into another system, and the best-evidenced propagation relation in the book runs in the opposite direction.

Claim 70.1.1. (Standing of the question at the close). *Of the four movements, the first is delivered with a negative principal result, the second as an application of an inherited position, the third as a formulation whose assessment is obstructed, and the fourth substantially unfulfilled.*

70.2 The Verdict on the Three Connections

This section discharges the obligation entered in Chapter 2. Its objective is to report, for each connection claimed, whether it licensed a statement the separate literatures withhold.

The first connection, from ritual studies to music history, is delivered. The procedure of Part III was carried to the historical material, and Chapter 30 identified in the figured bass an arrangement structurally identical to those of Part III. The connection licensed a statement, reported in Chapter 44.

The third connection, concerning variable realisation across chant, figured bass and modally organised practice, is delivered, and is delivered by the same result.

Claim 70.2.1. (Convergence of the first and third connections). *The first and third connections claimed in Chapter 2 were delivered by one result, namely that the assignment of fixity between a verbal and a melodic layer is a property of the practice, so that the book delivered one connection well where it claimed two.*

The claim is a correction of the book's own prospectus. Chapter 2 presented three connections as distinct; two of them proved to be one.

The second connection, from the measurement of performance coordination to historical musicology, is undelivered. Chapter 53 required a quantity relating the coordination cost of an ensemble to the number of its parties, and established that the quantity has not been supplied by the literature that could supply it. The connection is specified and remains unmade.

Claim 70.2.2. (Verdict on the connections). *Of the three integrative connections claimed, two were delivered by a single result and the third is undelivered for want of a measurement the relevant literature has not produced.*

70.3 Claims Withdrawn and Narrowed

This section assembles what the investigation removed. Its objective is to collect in one place the claims the book withdrew or narrowed in the course of establishing its results.

The mirror thesis was declined at the outset (Chapter 1) and the material confirmed the decline: no case was found in which musical organisation mirrors a social configuration.

The strong embedding hypothesis was narrowed in Chapter 12 to the claim that an elaborated sounding organisation carries relational information the verbal and prescriptive portions leave unspecified, and the narrowing followed from two findings: that music is dispensable for the enactment of a ritual relation, and that musical realisation is underdetermined by the relation as declared.

The inverse inference was declined in Chapter 4 and its failure was established formally in Chapter 68, where it was shown to follow from the structure of the arrangement and not from any deficiency of evidence.

The three-level temporal coupling was retained as a hypothesis and its language withheld from the book's descriptions (Chapter 47).

The general claim of concurrency was narrowed in Chapter 44 to one statement concerning the occupancy of the adjudicative position.

The treatment of conditions as admitting and excluding was reported as failing the standard of Chapter 2 for the single case (Chapter 44).

Claim 70.3.1. (Extent of the withdrawal). *Six claims available at the opening of this book were withdrawn or narrowed in the course of it, and in each case the withdrawal followed from material assembled for a different purpose.*

A second class of removal is recorded separately, since it concerns priority and not content. Four positions the book advances were found to have been advanced before it: that ensemble performance is constituted by parties living through a common temporal course (Chapter 2); that a completed determinate course conditions what follows it (Chapter 46); that music is an activity constituted by relationships (Chapter 2); and that acting together admits formal treatment as a relation among parties (Chapter 58). Each is now conceded at the point where the book uses it.

Claim 70.3.2. (Extent of the concession). *Four positions this book advances were established before it and are conceded where they are used, so that the book's contribution lies in the comparative and historical material brought to them and in their combination, and not in the positions themselves.*

The final clause is worth recording. No claim was withdrawn because it was found implausible; each was withdrawn because a case examined for another reason turned out to bear upon it.

70.4 The Defects the Framework Disclosed

This section reports what the investigation revealed about its own apparatus. Its objective is to collect the defects.

Four were reported in Chapter 25 and are restated here: the measure of elaboration understates practices coupling sound to movement; the axis distinguishing relations among persons from relations to the non-human world presupposes a boundary of personhood some traditions draw differently; the category of music is imported where a tradition declines it; and the assignment of a single profile to a tradition fails where a tradition maintains practices of different character.

Two further defects were disclosed by the formal Part. The framework describes fields as constituted and supplies no procedure for observing a field under a constituent's removal (Chapter 53). And the account's historicism and its interest in what is likely proved incompatible when a weighting was attempted (Chapter 67).

Claim 70.4.1. (Character of the disclosed defects). *Six defects in the framework were disclosed by its application, of which four concern its descriptive instruments and two concern commitments that proved incompatible or unsatisfiable, and none was visible before the application.*

70.5 What the Framework Forbids

This section restates the prohibitions, since they are among the book's results. Its objective is to collect them.

Four were fixed in Chapter 5: against inferring a relation from structural resemblance; against claiming embedding where a configuration may be altered without consequence for practice; against offering generative character as a warrant; and against ordering musical configurations developmentally.

Three were added in the course of the investigation. Against claiming propagation from documented use of musical vocabulary in another domain (Chapter 56). Against inferring the standing of a practice from the standing of its practitioners (Chapter 59). And against assigning measured durations to the events of a field supplying no temporal background (Chapter 63).

Claim 70.5.1. (Standing of the prohibitions among the results). *Seven prohibitions were fixed or established in this book, of which three were established by material examined for other purposes, and each excludes a form of argument available within the framework.*

70.6 The State in Which the Question Is Left

This section closes. Its objective is to state what a subsequent investigation would take up.

Three pieces of work are specified in the text and were not performed. The comparison

separating transmission from environment, specified in Chapter 26. The comparison of a repertory in its transmitted and its reformed organisational settings, specified in Chapter 44. And the case bearing on the propagation claim, specified in Chapter 61.

Two measurements would alter the standing of results reported here. The quantity relating coordination cost to the number of parties, whose absence undelivered the second connection. And a design constructed from an independent observation of a musical field, whose absence places the formal apparatus in the weakened condition Chapter 69 reported.

One question is left open which the investigation made statable and could not address: whether a common space of musical meanings is recoverable as a collective description valid within a regime (Chapter 67).

Claim 70.6.1. (Position at the close). *The investigation establishes that musical organisation is underdetermined by the relational configurations within which it arises, identifies five channels by which a relational commitment reaches the internal organisation of sounding, and leaves the converse question, concerning what musical practice contributes to the relational systems around it, substantially open.*

The claim states the book's position and states it without enlargement. A question asked in four movements has been answered in one, formulated in two, and left standing in the fourth.

70.7 Summary of Results

This chapter has reported the following. Of the four movements of the question, the first is delivered with a negative principal result, the second as an application of an inherited position, the third as a formulation whose assessment is obstructed, and the fourth substantially unfulfilled. Of the three integrative connections claimed, two were delivered by a single result and the third is undelivered for want of a measurement. Six claims were withdrawn or narrowed, in each case by material assembled for another purpose. Six defects in the framework were disclosed by its application, none of them visible before it. Seven prohibitions were fixed or established. Three pieces of specified work were not performed, two measurements would alter results reported here, and one question the investigation made statable is left open.

DRAFT

Glossary

This glossary lists the technical terms belonging to particular traditions that appear in the main text. Terms are given in the romanisation used in the book, with the original orthography where the book supplies it, a gloss, and the chapter in which the term is introduced. Terms of general musical description, defined in Part II, appear in the index and not here.

Romanisation follows Hanyu Pinyin for Chinese and modified Hepburn for Japanese, except where a different form is established in the scholarly literature, in which case the established form is retained in citation and the standard form is used in the text.

bayin (八音)

Eight materials. A classification of instruments by the substance of the sounding body, employed in the Chinese trajectory. Ch. 9, Ch. 37.

basso continuo

A notated bass line with figures specifying intervals to be sounded above it, realised in performance by one or more players. Ch. 30.

cham

A masked ritual dance of the Tibetan Buddhist traditions, performed with instrumental accompaniment. Ch. 17.

dang (钲)

A small struck idiophone used among the ritual instruments of Daoist liturgy. Ch. 14.

dizi (笛子)

A transverse flute, among the melodic instruments deployed in Daoist ritual where resources permit. Ch. 14.

dujiang (都讲)

Cantor. The officiant leading collective delivery in Daoist communal ritual. Ch. 14.

fanbai (梵呗)

The chanted liturgical practice of Chinese Buddhist monastic communities. Ch. 15.

faqi (法器)

Ritual instruments. The struck implements whose sounding is prescribed by Daoist ritual manuals, distinguished from the melodic instruments. Ch. 14.

***gagaku* (雅楽)**

The court music of Japan, including repertories transmitted from the continent. Ch. 18, Ch. 39.

***gaogong* (高功)**

High officiant. The priest conducting the central actions of a Daoist communal rite. Ch. 14.

***guanzi* (管子)**

A double-reed instrument among those deployed in Daoist ritual. Ch. 14.

***hakase* (博士)**

Neume-graphs indicating melodic movement in Japanese Buddhist chant, held by the tradition to be insufficient without oral instruction. Ch. 16.

***hichiriki* (篳篥)**

A double-reed instrument of Japanese court and shrine music. Ch. 18.

ison

A sustained supporting voice held beneath the melodic line in Greek and post-Byzantine liturgical practice. Ch. 20.

***jiao* (醺)**

Offering. One of the two principal classes of Daoist communal rite. Ch. 14.

***jiaofang* (教坊)**

An establishment maintaining and training performers at the Tang court. Ch. 39.

***jing* (经)**

Scripture. The written texts realised in Daoist and Buddhist liturgical delivery. Ch. 14, Ch. 15.

***kagura* (神楽)**

Sounding and dance performance within Shinto shrine ritual, divided between court and local traditions. Ch. 18.

***kagura-suzu* (神楽鈴)**

A hand-held bell-tree carried and sounded by dancers in *kagura*. Ch. 18.

***keyi ben* (科仪本)**

Ritual manuals prescribing the sequence of a Daoist rite. Ch. 14.

***kōshiki* (講式)**

A genre of Japanese Buddhist liturgical text and its performance. Ch. 16.

***kuden* (口伝)**

Oral transmission from teacher to pupil, held in the Japanese Buddhist chant tradition to be requisite for the transmission of chant. Ch. 16.

***mikagura* (御神楽)**

The court stratum of *kagura*, maintained by the imperial establishment and at certain major shrines. Ch. 18.

miko (巫女)

Shrine attendant, performing dances in a number of Shinto traditions. Ch. 18.

muyu (木魚)

Wooden fish. A struck slit drum used to pace collective recitation in Chinese Buddhist and Daoist practice. Ch. 12, Ch. 14, Ch. 15.

norito (祝詞)

Liturgical addresses delivered by priests in Shinto ritual. Ch. 18.

octoechos

The system of eight modal categories organising the repertory of the Eastern Christian traditions across a cycle of weeks. Ch. 20.

qing (磬)

A struck bowl-shaped idiophone, among the ritual instruments of Daoist and Buddhist practice; also, in the Chinese trajectory, a tuned stone chime. Ch. 14, Ch. 37.

rnga

A drum of the Tibetan Buddhist ritual ensemble. Ch. 17.

śākhā

Branch. A recension of the Vedic corpus, transmitted by its own line of specialists. Ch. 23.

sanban (散板)

Free-rhythm organisation, in which delivery proceeds without a maintained pulse. Ch. 6, Ch. 63.

sato-kagura (里神楽)

The local stratum of *kagura*, comprising the very large body of village and shrine traditions. Ch. 18.

shakubyōshi (笏拍子)

Wooden clappers supplying articulation in Japanese court *kagura*. Ch. 18.

sheng (笙)

A mouth organ, among the melodic instruments deployed in Daoist ritual. Ch. 14.

shofar

A horn sounded on specified occasions of the Jewish liturgical year, the one instrument retained in the synagogue practice treated here. Ch. 21.

shōmyō (声明)

The Buddhist liturgical chant of Japan, maintained principally within the Tendai and Shingon traditions. Ch. 16.

tajwīd

The codified body of rules governing articulation, assimilation, duration and pause in the recitation of the Qur'an. Ch. 22.

teànim

The accents of the Hebrew biblical text, marking stress, encoding the syntactic division of the verse, and determining the melodic figure of delivery. Ch. 21.

***wagon* (和琴)**

A six-stringed zither of Japanese court music. Ch. 18.

***weinuo* (维那)**

Precentor. The monastic office charged with leading and regulating the chant of a Chinese Buddhist assembly. Ch. 15.

***yangyun* (阳韵) and *yinyun* (阴韵)**

A distinction reported within the Wudang Daoist repertoire between styles used for rites of blessing and for rites concerning the dead. The scope of the distinction stands on the verification list. Ch. 14.

***yingqing* (引磬)**

A small hand-held struck bowl used to signal transitions in Chinese Buddhist liturgy. Ch. 15.

***yuefu* (乐府)**

The state office charged with the collection of regional song, and by extension the repertory it assembled. Ch. 38.

***yun* (韵)**

The melodic and rhythmic manner of delivery transmitted by a Daoist lineage, comprising vocal production, melodic shape and pacing. The central case of Part III. Ch. 14.

***zhai* (斋)**

Retreat or fast. One of the two principal classes of Daoist communal rite. Ch. 14.

znamenny

The chant tradition of the Slavonic Orthodox churches, historically delivered in unison and notated with its own system of signs. Ch. 20.

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This list assembles the works cited in the footnotes. Items marked with a dagger (†) are cited from secondary report and their bibliographic details have not been independently confirmed by the present author against a catalogue record or the item itself; the claims resting upon them are marked as conditional at the points where they occur. The remaining items have been confirmed.

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