

Between Sun and Moon

Relational and Substance Ontology in Eastern and Western Forms of Knowledge, Compared in Their Linguistic and Religious Registers

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Abstract

Traditions differ in whether the sun is spoken of as masculine or as feminine, and in the degree to which they individuate it as a person. This paper argues that questions of both kinds have been answered by comparing reports drawn from different levels of description, and it distinguishes five levels at which such an assignment may be fixed: the gender of the noun, the sex of a personified figure, a position within a systematic polarity, the direction of ritual address, and a rank and jurisdiction within an ordered pantheon. A criterion of level-matched comparison follows. Six cases are treated, each admitted because it separates one level from another, among them a Semitic family in which the lexical and personification levels diverge with contact as the specialists' explanation, and an Anatolian pantheon holding solar deities of both sexes at once. On that basis the question of the sun's sex is shown to lack a determinate subject unless a level is specified, and every account deriving a female solar assignment from a property the sun possesses everywhere is set aside as explaining a variable by an invariant. The paper then treats the logical form of polarity terms, arguing that the suppression of a relatum belongs to language generally, that traditions differ in whether they transmit a rule for recovering what is suppressed, and that the passage from a relational position to an essence consists in the loss of that rule. A distinction between a level reading and a phase reading of such a term renders consistent two doctrines that have been read as standing in tension, and yields the passage of a maximum into its opposite as a theorem about bounded quantities. Three structural readings of the degree of individuation are offered with the findings that would tell against them. The paper claims no finding in any specialist field, concedes the relational reading of the polarity terms to the scholars who established it, and asks to be judged by the questions it returns to those fields.

Keywords: comparative philosophy; solar and lunar deities; grammatical gender; yin–yang polarity; relational ontology

Standing of This Document

This is a preliminary discussion. It claims no new finding in Assyriology, Hittitology, Indo-European philology, Japanese religious history, sinology, or the psychology of language. Every historical statement it makes is drawn from specialist scholarship and is cited to the scholar who established it. Where specialists disagree, the disagreement is reported and left unadjudicated. Where a statement could not be traced to specialist scholarship, it has been excluded, and the exclusions are listed in Section 27, since their exclusion is itself information about the state of the material.

The author prepared this document with assistance from AI systems in searching literature, checking citations, and drafting. The bibliographic verification described in Section 27 was conducted for that reason and is reported in full. Several attributions that circulated in the sources consulted proved to be inaccurate and were removed; readers are asked to verify the citations here against the works themselves.

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Part I

The Standing of the Account and the Instrument It Uses

1 Introduction

The sun and the moon are among the oldest objects of sustained human elaboration. They have been named, classified, personified, addressed in ritual and ranked in hierarchies of divinity in every literate tradition of which we possess records, and the elaboration has left deposits in places that are studied today by separate disciplines. A philologist meets the sun in the gender of a noun and in the morphology of a theonym. A historian of religion meets it in a figure with a name, a sex and a history. A student of cosmology meets it in a position within a classificatory system. A historian of institutions meets it in a rite performed by a sovereign, or in a title conferred by a state. Each of these is a record of what a tradition did with the sun, and each is complete on the ground its discipline occupies.

Questions about how traditions differ in their treatment of the sun therefore arrive with an inheritance. The evidence is held in several places, the disciplines that hold it developed independently, and a comparison must assemble reports from more than one of them. This paper is about what that assembly requires, and it approaches the requirement through two questions that have been asked repeatedly for more than a century and answered in ways that assemble the reports without marking where each came from.

Two observations about the sun stand behind this paper, and both are long familiar.

The first belongs to the history of religions. The deity at the head of the Japanese chronicles, identified with the sun and named as the ancestress of the imperial line, is female, while the solar deities of Greece and Rome are male, and while the solar deity of Egypt stands at the centre of a cult in which the ruler is his son. The second belongs to philology. The German noun for the sun is feminine and the noun for the moon masculine, while the Latin nouns from which the Romance forms descend run the other way, and while Baltic follows the Germanic pattern. The two observations are of different kinds, and they have been set beside one another for a very long time, most often to suggest that a culture's sense of the sun is legible either in its stories or in its grammar.

The Mediterranean and Germanic materials are the ones usually placed at the centre of this discussion, and the Semitic materials complicate it at once. Across the greater part of the Semitic family the noun for the sun is feminine and the noun for the moon masculine, as Arabic still is. At Ugarit the solar deity is a goddess and the lunar deity a god. In Akkadian sources the solar deity is male, and specialists explain the divergence by transmission from a non-Semitic tradition in which the deity was male. Within one family, then, the gender of the noun and the sex of the figure come apart, and the specialists' account of why they come apart is historical. Anatolia complicates the discussion further, since the Hittite state pantheon was headed by a solar goddess and contained at the same time a male solar god of heaven.

The Chinese and Japanese materials complicate it from a third direction, because both languages lack a gender system. Chinese assigns the sun and the moon systematically to the poles of yang (the sunlit pole, 陽) and yin (the shaded pole, 陰), a classification that also orders the seasons, the directions, the numbers, the bodily organs and much else, and the assignment is stable across two millennia of technical literature. Japanese carries a solar deity as fully individuated as any in the Mediterranean material, while its own systematic polarity remains thin. Two traditions lacking the level at which German fixes its assignment therefore

fix assignments elsewhere, and they do so at different places from one another.

A fourth complication comes from the way divinity is designated. In the Chinese celestial pantheon a very large part of the figures are named by titles that state a position and a rank in place of a character: a point of the sky, a region of the sky and an imperial rank compounded into a single designation, or a bare term of rank appended to a stellar name. Japan conferred graded court ranks on its own deities by act of state. The Christian tradition arranged its celestial beings in nine ranked orders, and Mesopotamian sources present the gods as an assembly under a presiding figure. Designation by office is therefore attested widely, and it is a further place at which a tradition may fix something about a celestial body, distinct from the gender of a noun and from the sex of a figure in a story.

Set against this background, the observation from which this paper began is a difficulty about what may be compared with what. Accounts of why the sun is female here and male there routinely place a report about a noun beside a report about a deity, or a report about a deity beside a report about a cosmological classification. The reports come from different disciplines, each reporting what its own subject matter supplies, and each correct on its own ground. A difference between two such reports is a difference between the things reported, and it has yet to be shown to be a difference between the traditions. The same difficulty attends the second question this paper asks, where reports about the density of a popular cult are set against reports about the character of a state rite.

The Chinese material raises a difficulty of a second kind, which belongs to the philosophy of language and which the same instrument turns out to address. The tradition asserts, in the same body of doctrine, that the sun belongs to yang and that yin arises at the height of yang. Read as the ascription of a standing property, the two statements sit awkwardly together, and the awkwardness has generated a long secondary literature, some of it holding that the tradition operates with a logic tolerant of contradiction. Specialists in Chinese thought have established that the polarity terms are relational and context-dependent, so that a thing is yang only relative to something else, and that establishment removes the appearance of contradiction. It leaves a further question, which this paper takes up: what keeps the term of comparison available to a reader once the vocabulary is in circulation, and what follows where it ceases to be available.

Two questions are asked here, and they were asked in this form before the material was assembled.

Why is the sun deity female in some traditions, and the noun for the sun feminine in some languages?

Why did the sun fail to become a dominant personified deity in some traditions, in which it was nonetheless the object of sustained and elevated observance?

The paper proposes that what a tradition fixes about a celestial body may be fixed at five distinguishable places, which Section 4 defines as the lexical, the personification, the cosmological, the ritual and the office levels. The hypothesis of independence, stated there, holds that a tradition may carry an assignment at any of these levels, that an assignment at one constrains none at another, and that the absence of one leaves the others untouched. Section 5 states the criterion that follows: a comparison supports a conclusion about two traditions only where the compared statements concern the same level.

Six cases are treated, each admitted because it separates one level from another. The Semitic material dissociates the lexical level from the personification level within one language family. The Anatolian material holds two personification assignments of opposite sex within one state pantheon. The Japanese and Chinese materials carry strong assignments where the lexical level is unavailable, and differ from one another in which level carries them. The Latin

and Greek material supplies the assignment against which the Germanic one has been felt as anomalous. Egypt and the Andean case enter briefly, in Section 24, where the structure of a legitimacy claim is at issue.

Part IV then treats the logical form of the polarity terms, and Part V returns to the two questions.

The paper makes five claims on its own account, and Section 3.6 states them alongside the scholarship it concedes. In summary: the five levels taken together as a scheme with a comparison criterion; a rule of relatum recovery, stated as a criterion decidable from a tradition's doctrinal literature, with the production of an essence defined as the loss of that rule; a distinction between two readings of a polarity term, under which the doctrine of reversal follows as a theorem about bounded quantities; a correspondence between a space of polarity configurations and the finest divisions of the calendrical year; and two structural readings of the degree to which a body is individuated, offered with the findings that would tell against them.

Four delimitations are recorded here and restated in Section 27. The paper makes no finding in any of the specialist fields it draws on. It takes no position on whether grammatical gender shapes conception, a question whose experimental literature Section 6 reports as unsettled. It draws no conclusion about the scientific or technical trajectory of any tradition, and Section 22.4 declines that inference at the point where the material invites it. And it establishes conditions on comparison in place of comparative results, a cost stated in Section 25.3.

One matter of usage is fixed here. The expression *Eastern and Western* in the subtitle designates the geographic reach of the six cases and carries no claim of a dichotomy between two forms of thought. Section 17.2 gives the reason. A contrast stated in those terms has attracted a standing objection from comparative philosophers, and the paper accepts that objection and asks a different question, namely how a tradition distributes ontological work among five terms.

The paper asks to be judged by what it generates. Section 26 puts to each specialist literature a question answerable within it, and states in each case what an answer would do to the claims made here. Several of those questions could tell against the paper, and they are marked where they occur.

The remainder proceeds as follows. Part I fixes the standing of the account, defines the five levels, and states the comparison criterion. Part II treats the linguistic register across the Indo-European, Semitic and Anatolian material and the two traditions without grammatical gender. Part III treats the religious register, supplying a vocabulary for the marks of divinity and applying it to the Germanic, Mediterranean, Japanese and Chinese cases, and to the designation of divinity by office. Part IV treats the logical form of polarity terms, the passage by which a relational position becomes an essence, the two readings of a polarity term, the hexagram system, and the conditions under which the fixing of a relational background is sound. Part V answers the two questions and establishes the symmetry of the comparative error. Part VI returns questions to the specialists and records the limits, the exclusions and the conditions under which the paper's claims would fail. Section 2 names the scholarship on which all of this depends, before any of it is put to work.

2 Relation to Prior Work

The scholarship on which this paper depends is named here, with a statement for each body of it of what that body owns. The objective is to make the paper's dependence auditable, so

that a reader may separate what is reported from what is claimed before either is used, and so that a specialist may see at once which of the paper's statements fall within a field of that specialist's competence. The section proceeds by literature: the polarity terms and correlative cosmology, grammatical gender and its supposed effects, the comparative philology of the solar vocabulary, the ancient Near Eastern and Anatolian material, Japanese religious history, Chinese religion and the models of divinity, the cognitive science of religion, and the philosophy of ontological frameworks together with the sociology of reification. Each subsection names the works, states what they establish, and states where this paper's use of them stops. The section closes with the deficit that motivates the paper and with a framing that the paper declines. The method is attribution, and the paper's own five claims are stated separately in Section 3.6.

2.1 The Polarity Terms and Correlative Cosmology

The relational character of *yin* and *yang* is established scholarship, and the establishment is recent enough and specific enough to be attributed.

Graham's monograph on correlative thinking treats the pair as terms of a classificatory scheme whose application is governed by context, and his later study places that scheme within the argumentative culture of early China [18, 19]. Hall and Ames hold that yang and yin are in no way to be understood as cosmic principles or as ontological contrasts rooted in the nature of things, and they develop the point as part of a general account of early Chinese thought as a thought of correlation in place of substance [23, 24]. Wang's monograph, the fullest single treatment in English, states that the terms acquire meaning only in the expression of a particular relationship, and traces the vocabulary through cosmology, medicine, statecraft and self-cultivation [55]. Jiang states the relational point in the form of an example, that a young man is yang relative to his sister and yin relative to his father, and uses it to characterize a mode of dialectical thinking [35].

The tradition of scholarship is not unanimous. Tadd, examining the Heshanggong commentary, distinguishes usages in which the terms operate as modes from usages in which they operate more nearly as substances, and argues that a uniformly relational reading of the Han material is too simple [52]. Section 18.6 reports the qualification and indexes the paper's claim to the usages in which the relational reading holds.

Two further bodies of work stand behind these. Needham's account of correlative thought is the source from which much of the later discussion departs [42]. Black's study of the gendered aspect of correlative classification treats the relation between the polarities and the categories of male and female, and is the nearest prior owner of the material this paper takes up in Section 23 [6].

The present paper takes from all of this the relational character of the terms, conceding it entirely in Section 18.1, and asks a question that begins where these accounts leave off.

2.2 Grammatical Gender and the Question of Its Effects

Two distinct literatures meet here, and the paper's relation to them differs.

The first is descriptive and typological. Corbett's study distinguishes gender as a system of agreement classes, identifiable by the behaviour of agreement targets, from gender understood as a semantic property of referents, and establishes that the two coincide only partially and in ways that vary from language to language [12]. The distinction is the ancestor of the difference this paper draws between its first and second levels, and Section 4.7 says so.

The second is experimental, and concerns whether the gender of a noun colours the

way speakers conceive its referent. Jakobson’s essay on translation is the modern locus for the claim, argued there through the personifications available to Russian poets [34]. The experimental programme is organized around the study of Boroditsky, Schmidt and Phillips [7] and the conference report of the object-concept paradigm [45]. Its replication record is surveyed by Samuel, Cole and Eacott, who examined forty-three empirical studies and found a minority of results offering unambiguous support once sample size and repeated measures were accounted for [49]. A preregistered replication has since been published [15], and methodological criticism is of longer standing [41].

The warning that these two literatures have been run together, and that the gender of a noun has been mistaken for the source of the male and female personifications of the sun and the moon, was in circulation well before either of them took its present form [29]. Section 6 states the paper’s bounded relation to the experimental programme, and the bound is that the paper takes no position within it.

2.3 The Comparative Philology of the Solar Vocabulary

The reconstruction of the Indo-European vocabulary for the sun and the moon, and of the deities associated with it, is the work of comparative philology, and this paper reports two of its results.

Matasović argues that the parent language carried two words for the sun, a neuter abstract noun and a masculine noun serving also as the theonym, and further that the heteroclitic reconstruction commonly assumed for this word is improbable and unwarranted by the evidence [39]. His monograph on gender in the family supplies the wider framework within which the argument is made, including the development of the three-gender system from an earlier two-class one [38].

West’s handbook assembles the comparative material on the solar and lunar figures across the daughter traditions, including the recurrent figure of the sun-maiden, and records that the sex of the reconstructed solar deity is disputed among specialists for the reason that the daughter traditions supply deities of both sexes [57].

The paper reports both results and adds one observation of its own in Section 12.4, namely that a parent language holding an abstract noun apart from a theonym holds apart, at the level of the lexicon, the two things the test of Claim 12.1 distinguishes.

2.4 The Ancient Near Eastern and Anatolian Material

The material of Sections 8 and 9 is drawn from Assyriology and Hittitology, and the paper’s dependence there is heavier than anywhere else.

Krebernik’s article in the standard reference work on Assyriology supplies the account of the Mesopotamian solar deity, including the transmission of a masculine understanding from the Sumerian deity to the Akkadian one, and the observation that in the majority of Semitic languages both the word for the sun and the names of solar deities are grammatically feminine [36]. Asher-Greve and Westenholz treat the gender of Mesopotamian deities across textual and visual sources, and place the solar case among instances in which syncretism affected a deity’s gender [1]. Woods dissents, holding that the evidence for a female understanding of the Akkadian solar deity is ambiguous [61]. Section 8.4 reports the dispute and takes no position in it.

Taracha’s survey of second-millennium Anatolian religion and Haas’s history of Hittite religion supply the structure of the Hittite pantheon, including the solar goddess at its head, the male solar god of heaven, and the solar goddess of the earth [53, 21]. Beckman treats

the solar element in Hittite royal titulary [3]. Jacobsen's study of the Mesopotamian divine assembly is used in Section 15.6, where the point at issue is the distribution of graded and assembled pantheons across traditions [33].

Section 8.6 and Section 9.4 record that these works were consulted through the reference literature that reports them, so that attributions have been verified and pages have not, and Section 27 restates the disclosure and identifies it as the paper's largest exposure.

2.5 Japanese Religious History

Two works carry the Japanese case, and both are cited for positions in a dispute the paper reports without entering.

Matsumae's article on the origin and growth of the Amaterasu cult argues that the figure at the head of the eighth-century chronicles was formed from local solar deities of the Amateru type, several of them male and worshipped by coastal lineages, and that the sex of the resulting figure changed in the course of the centralization of the cult; the article also states, for its own purposes, that the name of the deity is a neutral one carrying no implication of feminine gender [40]. The second of these statements is used in Section 13.3, where it is recorded as a specialist stating on Japanese material the distinction that Claim 12.1 states generally.

Teeuwen and Breen's social history of the Ise shrines supplies both the institutional material used in Section 14.5, including the prohibition on offerings from any person other than the sovereign, and the position that the deity was male at the period when the cult was established and was feminized by the compilers of the chronicles under a female sovereign [54].

The classical commentarial reading, on which the deity is the sun itself and female from the beginning, is the other side of the dispute, and Section 13.1 records it.

2.6 Chinese Religion and the Models of Divinity

Three strands are drawn on here, and the third is a live dispute.

The reading of the Chinese supernatural order as articulated on the model of the imperial administration is developed by Weber in his study of Chinese religion, by Wolf in an essay that sets out the correspondence between the classes of supernatural being and the classes of person in the imperial order, and by Feuchtwang for popular religion [56, 60, 17]. Needham's account of the sky as an administrative order stands beside these [42].

The mechanism by which the state and local cults transacted is supplied by Hansen's study of the granting of titles in the Song, which shows imperial recognition operating as a principal route by which a local cult became a national one [27]. Chavannes's monograph on Mount Tai supplies the case that Section 14.5 uses against the monopoly explanation [11].

Hymes disputes the sufficiency of the bureaucratic model taken as a general account of Chinese divinity, and sets beside it a personal model in which a deity stands to a devotee in a direct relation unmediated by office, drawing his evidence from Song and modern local religion [32]. Section 15 presents the dispute in the conservative form of Section 3.7 and offers a reading of it that specialists may test.

Two further works supply material used in Parts III and IV. Esposito's study of the Shangqing practices of light supplies the Daoist solar and lunar deities and the discipline of solar visualization [16]. Nielsen's reference work supplies the hexagram systems, their calendrical correlations and the divinatory arithmetic treated in Section 21 [43].

2.7 The Cognitive Science of Religion

The elaboration of natural phenomena into agents has an explanatory literature of its own, and Section 16 concedes it.

Guthrie’s account treats religion as systematic anthropomorphism, holding that the perception of agency in ambiguous phenomena is a general and inexpensive operation of the human mind [20]. Barrett’s formulation of an agency-detection mechanism, built on Guthrie’s work, holds that the mechanism is readily triggered and that its outputs are candidates for religious elaboration [2]. Boyer’s account holds that concepts of supernatural agents recur because they combine intuitive expectations about their category with a small number of counterintuitive features [8].

Westh examines the evidence usually adduced for the claim that people reason about gods spontaneously and on intuitive assumptions, concentrating on the narrative comprehension experiments that are its principal experimental support, and concludes that the evidence bears a narrower load than the general claim built upon it [58].

The paper concedes these accounts for what they explain and marks in Claim 16.1 the point at which their coverage ends, namely the variation across traditions in the treatment of a single phenomenon.

2.8 Ontological Frameworks and the Sociology of Reification

Part IV draws on three literatures outside the study of religion, and concedes each.

The first concerns the standing of a choice of entities. Carnap holds that the adoption of a framework of entities is a practical question, to be settled by what the framework makes tractable, and distinguishes questions asked within a framework from questions asked about it [9]. Quine’s treatment of ontological commitment addresses the same matter from another side [47]. Hacking treats representation and intervention as related activities [22], Cartwright treats the conditions under which a law stated for an idealized case may be applied [10], and Wimsatt treats idealizations as tools with characteristic biases [59]. Howard’s study of Einstein supplies the separability principle and its distinction from locality, which Section 22 uses [31].

The second concerns what happens when a product of human activity is treated as a fact of nature. Berger and Luckmann define reification in those terms and hold that it implies a forgetting of authorship; Lukács describes a relation between persons taking on the character of a thing; and Honneth reconstructs the notion as a forgetting of prior recognition, a reconstruction that has itself been contested [5, 37, 30]. Section 19.2 concedes the whole of this description and states what distinguishes the case treated here.

The third concerns the relation between social structure and the structure of a pantheon. Durkheim’s account of the social furnishing of religious representations stands behind Swanson’s cross-cultural test of the relation, and behind Peregrine’s partial replication, which found problems in the sample and the method while supporting part of the original result [13, 51, 44]. The retraction of a recent study in this line, and the re-analysis that occasioned it, are reported in Section 24.5 [4]. The question itself is returned whole in Section 26.10.

Two further debates are reported and declined. Whether the grammar of classical Chinese carries implications for the ontology of Chinese thought is disputed between Hansen and his critics, and Section 17.5 states why the paper’s claims are independent of the outcome [25, 26, 28, 48]. Whether a tradition’s distribution of ontological work bears on its scientific trajectory is the question Sivin argued to rest on identifiable fallacies and Elman’s history is written against, and Sections 22.4 and 27.4 decline it [50, 14]. The scheme of ranked celestial

orders transmitted under the name of Dionysius the Areopagite is cited in Section 15.6 [46].

2.9 The Deficit That Motivates the Paper

Every literature named above is complete on its own ground, and the paper reports each of them in place of correcting any. What is absent from all of them, and what the paper supplies, is a vocabulary in which the level of a finding about a solar or lunar assignment can be stated.

The absence is intelligible, and its intelligibility is worth spelling out, since a deficit that looks like an oversight would be a criticism of somebody. A philologist reporting the gender of a noun has no occasion to mark that the report concerns a noun, because the noun is the subject of the discipline and every report in it concerns one. A historian of religion reporting the sex of a deity is under the same condition. A student of correlative cosmology reporting a polarity assignment is under it too. In each field the level is a constant, and a constant is invisible.

The need for the mark arises only where reports from two such fields are set beside one another, which is a demand that comes from outside both, and which neither field undertook to meet. The deficit is therefore unowned, and the paper attributes it to none of these literatures. What follows in Part I is an attempt to meet the demand, and the attempt is offered to the fields as a convenience with the standing that Section 3 describes.

2.10 A Framing Declined

One framing of this material is common enough to require an explicit refusal, and the refusal is made here so that it need not be repeated at each occurrence.

The framing holds that one civilization personified its celestial bodies as individuals while another ranked them as officials, and that the difference reveals something about their respective forms of thought. The comparison is usually drawn between the Olympian gods and the Chinese celestial bureaucracy, and it has an evident basis in each of those two bodies of material taken alone.

Two grounds are given for declining it. The first is evidential and is set out in Section 15.6: graded celestial orders are attested in the Christian, the Mesopotamian and the Anatolian material as well as in the Chinese and the Japanese, so that the contrast holds only where one European tradition is taken for the whole of the European evidence.

The second concerns the terms in which the framing is stated. A vocabulary that contrasts individuals with functionaries, or persons with offices, carries an ordering inside it, so that adopting the vocabulary settles the comparative question before any evidence is consulted. Section 3.8 states the paper's refusal of ranking as a standing constraint, and the refusal is restated at each point of risk in place of once, because in this material the ordering is built into the terms that come most readily to hand.

Two things remain to be settled before the material is handled. The first is what the paper claims on its own authority against what it reports, which Section 3 states. The second is the instrument itself, which Section 4 defines and Section 5 puts to use.

3 The Standing of This Account

The terms on which the remainder of the paper is to be read are fixed here in advance. Its objective is to fix, before any material is handled, what the paper claims on its own authority, what it takes from others, how it will present readings that specialists dispute, and

what it undertakes to refuse. The section proceeds by settling each of these in turn: the relation in which the claims stand, the form of the contribution, the criterion by which it asks to be judged, the direction of the translation burden, the classification of evidence, the division between what is claimed and what is conceded, the form in which contested readings appear, and the constraints under which the reading is conducted. The method throughout is declaration in advance, so that a reader may hold the later sections to terms fixed here.

3.1 The Relation in Which the Claims Stand

The paper reads six bodies of specialist scholarship and forms a relation with each. Its claims are indexed to that relation. On its own authority it makes no statement about the Ugaritic corpus, the Hittite state pantheon, the reconstruction of Proto-Indo-European nominal morphology, the formation of the Ise cult, the Han hexagram systems, or the experimental literature on grammatical gender. Every statement about those matters is a report of what a specialist has established, and it carries the weight the specialist gave it and no more. Where the paper adds something, the addition is a relation among the reports and is marked as such at the point where it is made.

The relational indexing just described has a consequence the paper accepts. A revision to any conceded finding propagates directly into whatever is built on it here. The paper is exposed at every point where it depends on a specialist literature, which is at almost every point, and Section 27 records the exposure in the form of a table.

3.2 The Form of the Contribution

The contribution offered is a coupling. Six literatures describe what happens at different levels of a single phenomenon, namely the assignment of sex, polarity, personhood or office to the sun and the moon. Each is complete on its own ground, and each lacks a vocabulary for saying which level its findings concern, having had no occasion to need one. In consequence their results compose poorly, and comparative statements assembled from them routinely place a finding about one level against a finding about another. The deficit is unowned. It appears only where the literatures are asked to speak together, and that demand comes from outside all of them.

What the paper supplies is a scheme in which the level of a finding can be stated, together with a criterion governing which findings may be compared. The scheme is silent on every question of fact about a tradition.

3.3 The Criterion of Success and Where It Is Discharged

A coupling device of this kind cannot be assessed for correctness in the way a historical finding can, since on its own it asserts only what a source could leave standing either way. The paper therefore asks to be judged by what it generates: whether the scheme produces questions that specialists can answer inside their own literatures, in their own idiom, with the evidence they already possess. Section 26 discharges this by putting such questions to each literature in turn, and states in each case what an answer would do to the claims made here. A scheme generating only questions whose answers it could absorb either way would be generating very little, and the questions in Section 26 are chosen so that some of them could tell against the scheme.

3.4 The Translation Burden and Its Direction

The burden of translation lies with the paper. Every term the scheme introduces is glossed into the established idiom of the literature it is addressed to, at the point of use, and the gloss is offered as a convenience for that literature with the force of a convenience only.

Two consequences follow for the paper's construction. The questions of Section 26 are each stated first in the specialist's own terms and only afterwards in the paper's, so that a specialist who declines the vocabulary entirely may still read the question and judge whether the available evidence bears on it. And the scheme's terms are chosen, where a choice existed, to be describable in the vocabularies they translate into: the levels of Section 4 are named for the kinds of evidence that identify them, in preference to names drawn from the paper's own analytical apparatus.

The direction of the burden is worth stating explicitly, because a coupling device of the kind described in Section 3.2 could be built the other way about, requiring each literature to restate its findings in a common vocabulary before they could be composed. A device so built would be unusable, since it would demand of every specialist a labour that serves the comparison and leaves that specialist's own work where it was.

3.5 The Classification of Evidence and the Treatment of Untraceable Statements

Three classes of statement appear in what follows and are distinguished throughout.

An *established finding* is a statement a specialist has made and that the paper reports. A *reported dispute* is a matter on which specialists take opposing positions, where the paper presents the positions and takes none. *This paper's reading* is a statement the paper makes on its own account, and the third class is deliberately small.

Two rules govern admission. A statement resting on a single source is flagged where it is used and gathered in Section 27. A statement that could not be traced to specialist scholarship is absent from the paper, and the significant absences are listed in Section 27, since the pattern of what had to be excluded is itself information about the condition of the popular and secondary material on these subjects.

3.6 The Claims Made and the Claims Conceded

The priority position is stated at the outset here in place of being deferred to the limits section, so that a reader may weigh the paper against its ancestors from the first page.

The paper concedes the following in full and claims no part of any of them. That yin and yang are relational and context-dependent terms, whose application to a thing holds only relative to something else, is established by Graham, by Hall and Ames, by Robin R. Wang, and by Jiang, and Section 18 opens by saying so [18, 23, 24, 55, 35]. That the sex assigned to a noun and the sex assigned to a personification are separable, and that the first has been mistaken for the source of the second, was argued in the nineteenth century, and the distinction between grammatical and semantic gender is Corbett's [29, 34, 12]. That the Chinese supernatural order was articulated on the model of the imperial bureaucracy is Weber's and Wolf's, and Hymes disputes its sufficiency [56, 60, 17, 32]. That a collectivity's representations of a transcendent order are furnished from its own social order is Durkheim's, and the proposition that political structure predicts divine structure was given a cross-cultural test by Swanson and a partial replication by Peregrine [13, 51, 44]. That the products of human activity may be apprehended as facts of nature or as results of cosmic laws, with the authorship forgotten, is Berger and Luckmann's, standing in a longer line from Lukács [5, 37, 30]. That

an ontology is chosen for what it makes tractable, and that the choice is a practical matter, is Carnap's [9, 47, 22, 10].

The paper claims five things on its own account, and they are the whole of what it offers.

1. The five encoding levels of Section 4, taken together as an explicit scheme, and the criterion of level-matched comparison of Section 5.
2. The recovery rule of Section 18, stated as a named and textually checkable criterion, with ontologization defined as the suppression of an argument followed by the loss of that rule.
3. The distinction between the level reading and the phase reading of a polarity term, under which the passage of a maximum into its opposite follows as a theorem about bounded oscillation.
4. The correspondence between the space of polarity configurations and the finest cells of the calendrical year.
5. Two structural readings of the degree of personification, offered for testing with falsifiers named: that cult intensity follows jurisdiction and not rank, and that personification follows the structure of a legitimacy claim.

3.7 The Form in Which Contested Readings Are Presented

Several matters treated here are live disputes among specialists, and one of the paper's own readings enters territory where a standing model has a standing opponent. A single form is adopted for all of them and is followed without exception. The positions are stated in the terms their holders use. The evidence each rests on is given. The paper's own preliminary reading, where it has one, is marked as preliminary and placed after the positions rather than among them. What would settle the matter is named. The form is applied to the formation of the Japanese solar deity's sex in Section 13, to the bureaucratic model of divinity in Section 15, and to the two readings of personification in Section 24.

3.8 The Standing Constraints on the Reading

Three constraints hold throughout and are restated wherever the material invites their breach.

The first is a guard against anachronism. The scheme is a describer's instrument. Its categories are attributed to no historical actor, and no passage is read as evidence that anyone possessed the distinctions the paper draws. Where a specialist observes that a tradition itself marked a distinction the scheme also marks, the observation is the specialist's and is cited as such.

The second is a refusal of ranking. The paper orders no tradition above another in richness, depth, coherence or sophistication, and it orders no encoding level above another. This constraint is under continuous pressure in the material, because the vocabulary in which these comparisons are usually conducted carries an ordering inside it, and because a comparison of a personified sun with an unpersonified one invites the conclusion that one tradition possessed something the other lacked. The refusal is therefore restated at each point of risk in place of once at the beginning.

The third is a separation of description from justification. The paper describes how sex, polarity, personhood and office were assigned, and it withholds support from any defence or criticism of the arrangements described. Where the material has been read denunciatorily by others, the paper takes the description and leaves the charge. With the terms of reading fixed,

the instrument may be constructed. Section 4 defines the places at which a tradition may fix an assignment, and Section 5 states what follows for comparison.

4 The Encoding Levels of a Polarity Assignment

The paper's instrument is constructed here. Its objective is to distinguish the places at which a tradition may fix the sex, the polarity, the personhood or the standing of a celestial body, and to establish that these places are distinct in what changes them and in who holds them. The section defines five such levels in turn, records for each what would count as a change to it, sets the six cases against the five levels in a table, states the hypothesis of independence that the rest of Part II and Part III test, and closes by naming the ancestors of each distinction. The method is definitional, and each definition is framed so that the level it names can be identified in a source without the identification presupposing the paper's conclusions.

4.1 The Lexical Level

Definition 4.1. (Lexical level). A tradition fixes an assignment at the lexical level when the noun denoting the body belongs to a gender or noun class of the language, so that the assignment is carried by agreement and inflection and is available to any speaker of the language whatever that speaker believes.

Three features of the level bear on its use in the comparison. What changes an assignment here is a change in the language, whether a shift of declension, a borrowing, or the loss of a gender system altogether, and changes of that kind proceed on timescales measured in centuries. Holding, in the sense of a capacity to decide, is absent, since no institution promulgates the gender of a noun and no practitioner may revise it. And the assignment is carried by every competent speaker whatever that speaker believes about the sun, which is what makes the level's evidence unusually uniform within a language community and unusually hard to connect to anything a particular person held.

The level is identified in a source by the behaviour of agreement targets, in the manner Corbett sets out, and the identification is available even where the tradition's religious material is lost [12].

4.2 The Personification Level

Definition 4.2. (Personification level). A tradition fixes an assignment at the personification level when a named figure identified with the body has a sex, and possesses some of the further marks of a person: kin, biography, speech, intention, a history of acts.

What changes an assignment at this level is a change in narrative, and narratives are held by those who compose, transmit and canonize them, which means that the level is held in a strong sense and that its holders are frequently identifiable. Compilation, canonization and suppression are the operations by which it changes, and each of them can be dated where a tradition's textual history is known.

The level admits of degree in a way the lexical level does not. A figure may possess a name and a sex while possessing little else, and another may possess an elaborate history of acts and relations. Section 11 decomposes the degree into marks that vary separately, because the religious cases of Part III differ in which marks they carry and a single scale would conceal the difference.

4.3 The Cosmological Level

Definition 4.3. (Cosmological level). A tradition fixes an assignment at the cosmological level when the body is assigned to a pole of a systematic polarity that also classifies other things, so that the assignment carries consequences for what the body is grouped with and how it is expected to behave.

What changes an assignment at this level is a change in the classificatory system itself, and such systems are held by the practitioners of the arts that use them, which in the Chinese case means the calendrical, medical and divinatory professions in the first place and the wider literate culture at a remove. A polarity assignment is therefore relatively insulated from changes in narrative and from changes in the language, and Part II treats a tradition in which it persists while the other two levels supply nothing.

The level is identified in a source by the presence of a system: an assignment counts as cosmological where the same pair of terms classifies things of other kinds and where consequences follow for what a thing is grouped with. A single metaphorical pairing of sun and moon with male and female satisfies neither condition, and the paper does not count one. The term *polarity assignment* is used throughout in place of any term formed on gender, since the polarity in question classifies seasons, directions, numbers, organs and offices, and its application to sex is one application among many [6, 18].

4.4 The Level of Ritual Address

Definition 4.4. (Level of ritual address). A tradition fixes an assignment at the level of ritual address when the body is the recipient of offering, petition or observance, so that a practice is directed at it and would fail of its object if the body were absent.

What changes an assignment at this level is a change in ritual practice, and such practice is held by whoever conducts it, which may be a state, a priesthood, a household, or all of these in different portions and at once. Holding is therefore divisible here in a way it is not at the other levels, and Section 14.5 turns on that divisibility, since the question of who may perform a rite and the question of how densely it is performed have different answers in the Chinese case.

The level is identified in a source by the record of a practice: an altar, a season of observance, a prescriptive text assigning the rite to an agent, or a report of petitions addressed. Its evidence is accordingly institutional, and it survives in archives where narrative evidence has perished.

4.5 The Level of Office

Definition 4.5. (Level of office). A tradition fixes an assignment at the level of office when the body is given a position in a ranked hierarchy together with a jurisdiction over some domain, so that its standing is stated by naming what it is above, what it is below, and what falls to it.

A fifth level is introduced because the Chinese and Japanese material encodes celestial figures in exactly the manner just defined, and because each of the four preceding definitions leaves that encoding unrecorded. A title of the form Beiji Ziwei Dadi (Great Emperor of the Purple Tenuity at the North Pole, 北極紫微大帝) states a spatial position, a celestial region and a rank, and a designation of the form xingjun (stellar lord, 星君) or dijun (imperial lord, 帝君) states a rank while stating nothing of a biography. Two components are separable within the level and are kept separate throughout: the *rank*, which places a figure in the hierarchy,

Table 1: The five encoding levels across the six cases. Entries record what the case is used to establish in Parts II and III and are supported at the point of use.

Case	Lexical	Personification	Cosmological	Office
Latin, Greek	sun masculine, moon feminine	Sol, Helios masculine	absent	weak
Germanic	sun feminine, moon masculine	Sól feminine, Máni masculine	absent	weak
Semitic	sun feminine across most of the family	Shapshu feminine at Ugarit, Shamash masculine in Akkadian	absent	divine assembly
Anatolian	obscured by logographic writing	Sun goddess of Arinna and Sun god of Heaven together	absent	ranked state pantheon
Japanese	no gender system	Amaterasu feminine, the formation disputed	imported, thin	court ranks conferred on kami (deities, 神)
Chinese	no gender system	thin for the sun	sun yang and moon yin, systematic	<i>imperial lord</i> and <i>stellar lord</i> hierarchy

and the *jurisdiction*, which states what it is petitioned about. What changes an assignment at this level is a promulgation, whether by a state conferring a title or by a compilation fixing a canon, and the level is therefore held more visibly than any of the others.

4.6 The Independence of the Levels

Hypothesis 4.6. (Independence of levels). A tradition may carry an assignment at any of the five levels; an assignment at one level constrains no assignment at another; and the absence of a level from a tradition leaves the assignments at its other levels untouched.

Table 1 sets the six cases treated in Parts II and III against the five levels. The table is a summary of what those parts establish and is placed here so that the shape of the argument is visible before the cases are read. Part II tests the hypothesis on the first and third levels, Part III on the second, fourth and fifth.

4.7 The Ancestry of the Distinctions

The distinctions assembled here are not new severally, and the paper claims only their assembly and the criterion built on it in Section 5.

The separation of the lexical level from the personification level, and the warning that the first has been mistaken for the source of the second, is at least as old as the nineteenth century [29]. The direction of influence running from grammatical gender to personification is Jakobson’s [34]. The systematic distinction between grammatical gender as an agreement phenomenon and semantically grounded gender is Corbett’s [12]. The cosmological level as a classificatory system with its own logic is described by Graham and, in its gendered aspect, by Black [18, 6]. The level of office is described for the Chinese case by Weber, by Wolf and

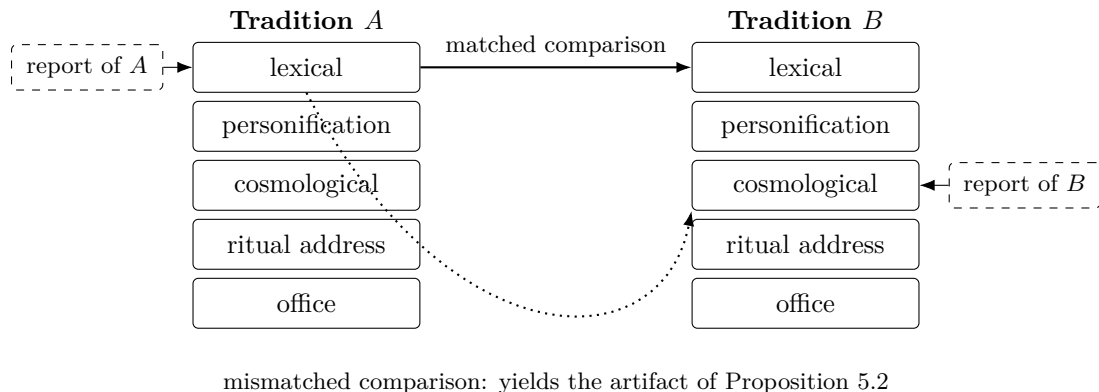


Figure 1: The five encoding levels of Definition 4.1 to Definition 4.5, and the two ways in which two traditions may be compared. A comparison of statements at the same level supports a conclusion about the traditions. A comparison of a report at one level with a report at another supports a conclusion about the levels, and yields the artifact described in Proposition 5.2.

by Feuchtwang, and its sufficiency is disputed by Hymes [56, 60, 17, 32]. The levels having been defined, the criterion they support may be stated. Section 5 states it, shows what a comparison yields where it is unmet, and records the principle by which the six cases were selected.

5 The Criterion of Level-Matched Comparison

The criterion that the scheme of Section 4 exists to support is stated here, together with an account of what goes wrong where the criterion is unmet. Its objective is to make precise a failure that is easy to describe loosely, namely the production of a comparative result by placing a finding about one encoding level against a finding about another. The section states the criterion, gives a construction showing how the resulting artifact is produced, states the principle by which the paper’s own cases were selected, and closes with the limits of the criterion. The method is a construction with two traditions and two levels, carried out abstractly so that it may be checked against the worked cases in Parts II and III.

5.1 The Criterion

Claim 5.1. (Level-matched comparison). A comparison of two traditions with respect to the sun or the moon supports a conclusion about those traditions only where the compared statements concern the same encoding level. Where the compared statements concern different levels, the comparison supports a conclusion about the levels and about nothing else.

The claim is weaker than it may appear. Its content is exhausted by one point: a difference located between levels has yet to be shown to be a difference between traditions, since the same difference would appear between two descriptions of one tradition taken at the two levels.

5.2 The Production of the Artifact

Proposition 5.2. (Production of the artifact). Let traditions A and B each carry an assignment for the sun. Let A ’s assignment be reported at level ℓ_1 and B ’s at level ℓ_2 , with $\ell_1 \neq \ell_2$. Then a comparison of the two reports yields a difference whose magnitude is a function of the distance between ℓ_1 and ℓ_2 , and this difference is present even where A and B carry identical assignments at every level they share.

Figure 1 sets out the situation. The construction is immediate. Suppose *A* and *B* both assign the sun a feminine value at the lexical level, both leave the personification level thin, and both lack a cosmological polarity. Suppose further that *A* is described by a philologist, who reports the lexical assignment, and *B* by a historian of religion, who reports the thinness of personification. The comparison then reads: in *A* the sun is feminine, and in *B* the sun is barely a figure at all. The difference is entirely an artifact of which specialist described which tradition.

The construction is abstract, and the worked instances are these. A reader taking the lexical level as the standard finds that Chinese has no sexed sun, since Chinese has no gender system, and concludes to a difference from Germanic that the Chinese cosmological assignment does not support. A reader taking the cosmological level as the standard finds that Germanic has no polarity system and concludes to a difference from Chinese that the Germanic lexical and personification assignments do not support. The error is symmetrical, and Section 25 returns to the symmetry, since a criterion that corrected the error in one direction alone would be a criterion addressed to one tradition.

5.3 The Principle Selecting the Cases

The six cases treated in Parts II and III were selected by one principle, stated here so that the selection may be audited: a case is admitted where it separates one encoding level from another. No case is admitted as representative of a civilization, a region, or a language family, and the conclusions drawn here about a tradition extend only as far as what the case is used to separate.

The Semitic case is admitted because it dissociates the lexical level from the personification level within a single language family. The Anatolian case is admitted because it exhibits two personification assignments held at once within a single state pantheon. The Japanese case is admitted because it carries a strong personification assignment with no lexical level available to carry one. The Chinese case is admitted because it carries a strong cosmological assignment with a thin personification assignment, and because it separates ritual address from characterization. The Latin and Greek case is admitted because it supplies the assignment against which the Germanic one is felt as anomalous, and the Germanic case because that anomaly is the observation from which the paper began.

5.4 The Limits of the Criterion

Three limits are recorded, and Section 27 restates them.

The criterion presupposes that the levels are distinguishable in the traditions treated, and that presupposition is carried without argument throughout. Distinguishability is plainly false for some purposes, since the levels interact, and the paper's position is only that the levels may be separately identified in the six cases, which Parts II and III attempt to show by exhibiting cases in which they come apart.

The criterion governs the form of a comparison and leaves its content untouched. A criterion of form can show that a comparative conclusion has yet to be earned, and it leaves the supply of the conclusion that a matched comparison would have earned to the specialists.

The criterion is silent on the relations among levels. Whether an assignment at one level tends to induce one at another, and in which direction, is precisely the question the specialist literatures dispute, and Section 7 reports that dispute as it stands in Indo-European studies without entering it. Part I closes here. The two Parts that follow apply the criterion to material, taking the linguistic register first and the religious register second, and each case is

presented with the level it is admitted to separate. Part II opens at Section 6 with the paper's relation to the experimental literature on grammatical gender, since a reader of the linguistic cases will want to know at the outset how far this paper enters that debate.

Part II

The Linguistic Register

6 Grammatical Gender and the Standing of the Relativity Question

The paper's relation to the experimental literature on grammatical gender and thought is fixed here. Its objective is to establish that the argument of Parts II and III holds whichever way that literature settles, and to say why the paper declines to enter it. The section reports the founding study and the state of its replication, states the bounded position the paper adopts, distinguishes the question the experimentalists ask from the question asked here, and closes by returning one question to that literature in place of answering it. The method is concession followed by delimitation.

6.1 The Literature and the State of Its Replication

The modern discussion of whether the gender of a noun shapes how speakers conceive its referent is organized around the work of Boroditsky, Schmidt and Phillips, whose bridge and key materials are the most frequently cited demonstration of the effect [7]. Two features of that work bear on how it may be used. Its empirical results were reported in conference proceedings and in an edited volume, and the central findings were not published in a peer-reviewed journal. And its replication record is mixed. Samuel, Cole and Eacott, reviewing forty-three empirical studies, found that a minority of results offered unambiguous support once sample size and repeated measures were accounted for, that a comparable share left the effect unsupported, and that support depended strongly on task and context, with several outcomes admitting alternative explanations of equal standing [49]. A preregistered replication of the object-concept paradigm, targeting the conference study in which that paradigm was reported [45], has since been published [15], and criticism on methodological grounds is of longer standing [41].

The paper reports this state of affairs because its own material has often been drawn into the discussion, and a reader who arrives expecting the effect to be established, or expecting it to be refuted, should know that specialists hold both positions loosely.

6.2 The Position the Paper Adopts

The paper takes no view on whether the gender of a noun shapes the conception of its referent.

The refusal is a position taken on a ground, and the ground is that the paper's claims concern what a comparison licenses. Claim 5.1 governs the inference from a report about one tradition to a conclusion about that tradition set beside another. Whether German speakers conceive the sun in a manner detectably coloured by the gender of *Sonne* bears on what a German speaker thinks, and the answer to that psychological question leaves untouched the question of whether a report about German lexical gender may be compared with a report about Chinese cosmological classification, which is the question Claim 5.1 answers. Every argument in Parts II and III is available to a reader who holds the effect to be robust and to a reader who holds it to be absent.

6.3 The Psychological Question and the Comparative Question

The experimental literature asks a psychological question: given a speaker of a language with a gender system, what may be inferred about that speaker's concepts. The present paper asks a comparative question: given a report about a tradition, what may be inferred about that tradition when the report is placed beside a report about another.

The psychological question and the comparative question have different subjects, different evidence and different failure modes, and they have been run together often enough that the running together is worth marking. A demonstration that grammatical gender colours conception would leave the artifact of Proposition 5.2 exactly where it stands, since that artifact arises from the mismatch of report to report and would arise between two descriptions of a single tradition taken at two levels.

6.4 A Question Returned

One observation is offered to the experimental literature, and it is offered in the form of a question. The stimuli in this paradigm are ordinary objects, and the dependent measures are adjective choice, similarity judgement and memory for pairings. Personification is among the phenomena the paradigm was designed to probe, and personification is the second of the five levels defined in Section 4. Whether the inconclusiveness of the replication record reflects a stimulus set that mixes levels is a question answerable inside that literature with the methods it already possesses, and Section 26 states it in the form a reader of that literature would recognize. The paper's claims stand whichever answer is returned. With that relation fixed, the linguistic cases may be presented. Section 7 takes the family in which the divergence at issue is oldest and best reconstructed.

7 The Indo-European Evidence and Its Internal Divergence

The first of the four linguistic cases is presented here. Its objective is to establish that the assignment of sex to the sun and the moon diverges inside a single language family, and that the divergence is old enough to reach the reconstructed stage. The section reports the attested divergence between the Italic and the Germanic and Baltic branches, reports what specialists reconstruct for the parent language, states the consequence for any account that would derive the pattern from a single source, and closes by reporting the position of the specialist literature on the direction of influence between lexical gender and personification. The method is report of philological findings, with the paper's own contribution confined to the consequence drawn in Claim 7.1.

7.1 The Attested Divergence

Latin pairs a masculine *sol* with a feminine *luna*. Germanic pairs a feminine noun for the sun with a masculine noun for the moon, a pattern preserved in modern German *die Sonne* and *der Mond*. Baltic follows the Germanic pattern, with a feminine *Saulė* and a masculine *Mėnuo*. The three branches belong to one family, and their assignments at the lexical level oppose one another.

At the personification level the same opposition appears. The Germanic tradition personifies the sun as the goddess Sól and the moon as the god Máni; the Roman and Greek traditions personify the sun as the male Sol and Helios [57].

7.2 The Reconstructed Stage

Two findings from the reconstruction bear directly on the paper's scheme.

The first is Matasović's argument that the parent language had two words for the sun, of different genders and different functions: a neuter abstract noun, and a masculine noun that also served as the theonym [39]. He argues further that the heteroclitic reconstruction often assumed for this word is improbable and unsupported by the evidence. The paper reports both points as his, and notes that his study of gender in the family stands behind them [38].

The second is that the sex of the reconstructed solar deity is disputed among specialists, for the reason that the daughter traditions supply deities of both sexes [57]. The reconstruction is therefore silent on the question this paper began from, and it is silent for a reason internal to the comparative method, the evidence being abundant and divided.

The first finding is worth marking for a use made of it later. A tradition in which the abstract noun and the theonym are distinct lexemes of distinct genders holds the two apart at the reconstructed stage itself, and Section 12 takes up what follows from a theonym that coincides with the ordinary noun for the body and what follows from one that diverges from it.

7.3 The Consequence for Single-Source Accounts

Claim 7.1. (Internal divergence). The divergence in the assignment of sex to the sun and moon within the Indo-European family is internal to that family and reaches its reconstructed stage. Any account deriving the assignment found in one branch from a source outside the family must therefore explain why the same source left the neighbouring branches with the opposite assignment.

The claim is directed at a family of proposals that the paper declines to entertain further, of which the relevant instance is the suggestion that the Germanic assignment stands in some line of descent from East Asian polarity cosmology. The Germanic assignment has a reconstructible history inside its own family, the Italic branch of that family carries the opposite assignment, and Baltic carries the Germanic one. A diffusionist account would have to select among branches on grounds it has yet to supply. The paper accordingly excludes the proposal, and Section 27 records the exclusion.

7.4 The Direction of Influence in the Specialist Literature

Whether the gender of the noun shaped the sex of the personification, or the sex of the personification shaped the gender of the noun, is a question on which the specialist literature has reached no settled position, and the reference literature states the uncertainty in both directions for the Germanic case in particular. The paper reports the uncertainty and leaves it standing, since Claim 5.1 requires no answer to it: a criterion governing which reports may be compared is indifferent to the causal history that produced the reports.

The refusal to adjudicate the direction of influence is the first of several such refusals, and in each the refusal is a condition of the scheme's usefulness. A scheme that presupposed a direction of influence would be unusable in exactly the traditions where the direction is contested, which are the traditions the scheme was built to compare.

7.5 A Note on the Baltic Material

The Baltic evidence is carried in this paper only as far as the philology supports, namely the gender of the nouns and the sexes of the personifications. Readings of the Baltic solar material within reconstructive accounts of prehistoric religion have been influential and have been contested, and the paper takes no position on them and leaves them out of its evidence. The Indo-European material establishes that the assignment diverges within a family. The Semitic material, treated in Section 8, establishes something stronger, namely that the gender of the noun and the sex of the deity may diverge from one another within a family, and that specialists explain such a divergence historically.

8 The Semitic Evidence and the Dissociation of Lexical Gender from Deity Sex

The case on which the hypothesis of independence bears most directly is presented here. Its objective is to exhibit a language family in which the lexical level and the personification level carry opposed assignments, and in which specialists supply an explanation of the divergence that is historical and datable. The section reports the lexical situation, reports the two attested deities, reports the explanation offered for their difference together with the dissent it has attracted, states the consequence for the scheme, and records one claim the paper excludes. The method is report, with the paper contributing only the consequence in Claim 8.1.

8.1 The Lexical Situation

Across the greater part of the Semitic family the noun for the sun is grammatically feminine and the noun for the moon masculine. Arabic *shams* is feminine and *qamar* masculine, and the pattern recurs in the older languages of the family. The generality of the pattern is stated in the reference literature on the Mesopotamian sun deity, where it is noted that in the majority of Semitic languages both the word for the sun and the names of solar deities are grammatically feminine [36].

Two observations follow, and the second is what makes the case load-bearing. The Semitic assignment coincides with the Germanic one and opposes the Italic one, so the two families between them exhibit both assignments and neither family's pattern can be treated as the unmarked case. And the coincidence between Semitic and Germanic is between unrelated families, so it is available neither to an account deriving the pattern from inheritance within a family nor to an account deriving it from contact between these two, and Section 23 draws the consequence.

8.2 The Attested Solar Deities of the Family

At Ugarit the solar deity is the goddess Shapshu, daughter of El, whose standing epithets in the Ugaritic corpus present her as the luminary of the gods and who acts throughout the Baal cycle as messenger and as an agent in the recovery of Baal. The lunar deity Yarikh is male. The Ugaritic assignment therefore aligns the lexical and the personification levels.

In Akkadian the solar deity Shamash is male, as is his Sumerian counterpart Utu. The Akkadian assignment therefore opposes the lexical and the personification levels within a family whose lexical assignment is otherwise uniform.

8.3 The Explanation Offered, and the Dissent

Krebernik's account, as reported in the reference literature, holds that Utu was understood as a masculine deity in Sumerian, and that this most probably carried into the view taken of his Akkadian counterpart, notwithstanding the feminine gender of the noun and of solar theonyms across most of the family [36]. Asher-Greve and Westenholz treat the case in their study of divine gender in Mesopotamian sources, where it appears as an early instance of a deity's gender being affected by syncretism [1]. The position has a dissenter: Woods has argued against the assumption that the name Shamash was ever taken to denote a female deity in Akkadian-speaking areas, holding the available evidence to be ambiguous [61].

The paper reports the dispute and takes no position in it. What matters for the scheme holds on either account, since both parties agree that the lexical gender of the Semitic word and the sex of the Akkadian deity stand apart, and they disagree only about whether an earlier alignment preceded the separation.

8.4 The Consequence for the Scheme

Claim 8.1. (Dissociation within a family). The lexical level and the personification level carry opposed assignments within the Semitic family, so that determination fails in both directions; and where specialists explain the divergence, the explanation offered is contact between language communities, and it appeals to no property of the sun or of the people observing it.

The second half of the claim carries as much weight as the first. Accounts of why a tradition holds a female sun frequently appeal to properties that the sun possesses everywhere, or to climatic conditions under which the sun is experienced as harsh or as gentle. The Semitic case supplies a family in which the sun is experienced under conditions that are the standing example of solar harshness, and in which the noun is feminine and the best attested solar deity of the Levantine branch is a goddess. Section 23 draws the general consequence.

8.5 A Claim Excluded

A stronger reading circulates, on which the Akkadian solar deity was originally a goddess whose sex subsequently changed. The reading rests principally on personal names of a type meaning that the sun is the bearer's mother, and the interpretation of that evidence is exactly what Woods contests [61].

The paper excludes the strong reading and uses only what both parties to the dispute accept. Two reasons govern the exclusion. The argument of Section 8 requires only that the lexical and personification assignments stand apart in the attested material, which both parties grant, so the strong reading would add nothing the argument uses. And a claim about an unattested earlier stage is precisely the kind of claim this paper is least equipped to weigh, since it turns on the reading of onomastic evidence in a language the paper approaches through the reference literature. Section 27 records the exclusion.

8.6 The Standing of the Reports in This Section

The specialist works cited here were consulted at second hand, through the reference literature that reports them, and the paper has verified the attributions, leaving the pages unchecked. Section 27 records this, since the Semitic case carries more weight in the argument than any other and a reader is entitled to know how far its sources have been checked. The Semitic case exhibits two levels carrying opposed assignments. Section 9 treats a case in which one

level carries two assignments at once, which bears on the form of the comparative question in a more direct way still.

9 The Anatolian Evidence and the Coexistence of Both Assignments

The case bearing most directly on the form of the comparative question is presented here. Its objective is to exhibit a tradition holding two solar assignments at once, and to draw from it the consequence that the question of a tradition's solar sex may lack a subject before any comparison is attempted. The section reports the Hittite solar deities, reports the difficulty the writing system places in the way of the evidence, states the consequence, and records the standing of its sources. The method is report, with the paper contributing only Claim 9.1.

9.1 The Hittite Solar Deities

The Hittite state pantheon was headed by a solar goddess, the Sun goddess of Arinna, consort of the weather god, whose Hattian antecedents lie in the substrate the Hittites absorbed. The same pantheon held a male Sun god of Heaven, and a Sun goddess of the Earth associated with the world below [53, 21]. The Luwian solar deity Tiwaz was male. The royal titulary addressed the king in solar terms [3].

Two solar assignments of opposite sex therefore stood within one state cult, distinguished by domain: the celestial and the chthonic, the state pantheon's head and the god of heaven.

9.2 The Difficulty in the Evidence

Hittite scribes wrote solar deities with a Sumerographic sign, and the sign carries no information about which of the several solar deities is meant. A modern reader of a Hittite text must therefore infer the referent from context, from the epithets attached, and from the ritual setting, and the inference is often underdetermined. Specialists accordingly describe the interpretation of the Hittite solar deities as an open subject [53].

The paper reports the difficulty as a finding about the evidence, and treats it as material to its argument in place of an obstacle to it, for the following reason. A writing system that suppresses a distinction present in the pantheon produces reports from which a level cannot be read off, and the paper's subject is what happens when reports of that kind are compared. Anatolia therefore supplies, at the level of the script, a small model of the difficulty the whole paper addresses at the level of the disciplines.

One consequence for the paper's own procedure follows. The Anatolian statements in Section 9.1 are drawn from the specialists' synthesis of the pantheon and not from any reading of a particular tablet, and Section 9.4 records what that dependence amounts to.

9.3 The Consequence for the Comparative Question

Claim 9.1. (Coexistence of assignments). Where a tradition holds solar assignments of opposite sex at once, a question of the form “what sex is the sun in this tradition” has no determinate subject, and a comparison built on an answer to it reports the selection made by whoever answered.

The claim is stronger in its consequence than in its content. Anatolia furnishes a case in which the failure of the comparative question is visible without any argument from the paper's scheme, since the failure is legible in the pantheon itself. The scheme's contribution here is

limited to saying where the two assignments sit, namely both at the personification level and distinguished by domain, and to observing that the selection an answerer makes between them will ordinarily be made by which deity that answerer's sources foreground.

Anatolia therefore carries the criterion in this paper, in place of illustrating it. A reader who declines the five-level scheme entirely still faces the Hittite pantheon, and still has to decide which solar deity a comparison with Rome or with China is about.

9.4 The Standing of the Reports in This Section

As in Section 8, the specialist works cited here were consulted through the reference literature that reports them. The attributions have been verified and the pages have not, and Section 27 records the disclosure among the paper's presuppositions.

The disclosure carries more weight here than elsewhere, and the paper states why. Anatolia is the case on which Claim 9.1 rests, and Claim 9.1 is the strongest of the paper's linguistic-register results, since it holds that the comparative question may lack a determinate subject before any comparison is attempted. A reader who declines the second-hand sourcing declines that claim, and Section 26 accordingly puts to Hittitologists the question whose answer would settle it, namely whether the two solar deities were understood by any period's practitioners as one deity differently described. The three cases treated so far all possess a lexical level. Section 10 closes Part II with the two traditions that lack one, and fixes the terminology in which the cosmological level is described for the remainder of the paper.

10 Polarity Encoding Outside the Grammatical System

Part II is completed here by the two cases in which the lexical level is unavailable. Its objective is to show that a tradition whose language lacks a gender system may nonetheless carry a strong assignment at another level, and to fix the terminology in which such assignments are described for the remainder of the paper. The section treats the Chinese and the Japanese situations in turn, states the consequence for the hypothesis of independence, and settles the terminology. The method is report followed by definition.

10.1 The Chinese Situation

Chinese has no grammatical gender, and the lexical level is accordingly unavailable to it. The tradition nonetheless carries a systematic assignment at the cosmological level, in which *ri* (the sun, 日) stands at the yang pole and *yue* (the moon, 月) at the yin pole, and in which that pairing is coordinated with a wide range of further pairings covering day and night, the seasons, the directions, warmth and cold, and much else [18, 55]. The assignment is systematic in a strict sense: it carries consequences for what the sun is grouped with and for what is expected of it, which is what Definition 4.3 requires.

The gendered aspect of this classificatory system, and the relation between its polarities and the categories of male and female, is the subject of Black's study, and the paper concedes that material to her [6]. What the paper takes from the Chinese case in Part II is the bare structural point that a strong assignment is present where the lexical level is absent.

10.2 The Japanese Situation

Japanese likewise has no grammatical gender, and the lexical level is likewise unavailable. The tradition carries a strong assignment at the personification level, in the female solar deity

whose formation Section 13 treats, and it received the Chinese cosmological system in a form that Section 13 characterizes as thin by comparison with the Chinese case.

The two cases therefore differ from one another in which level carries the assignment, while agreeing in the unavailability of the lexical level. A pair of traditions so configured is what the hypothesis of independence predicts should be possible, and Part II closes with the pair for that reason.

10.3 The Consequence

Claim 10.1. (Encoding beyond the lexical level). The absence of a gender system from a language leaves the assignments carried at the personification, cosmological, ritual and office levels of the corresponding tradition undisturbed; and a report that a tradition “has no sexed sun” derived from the absence of the lexical level reports the language and leaves the tradition unexamined.

Taken with Claim 8.1, this completes what Part II contributes to Hypothesis 4.6. Claim 8.1 shows the lexical and personification levels coming apart where both are present. Claim 10.1 shows assignments persisting where the lexical level is absent altogether.

10.4 Terminology

The term *polarity assignment* is used in this paper for an assignment at the cosmological level, in preference to any term formed on gender or on sex. Two reasons govern the choice.

The first is fidelity to the material. The polarity of yinyang (the polarity pair, 陰陽) classifies seasons, directions, numbers, bodily organs, offices and much besides, and its application to male and female is one application among many. A term formed on gender would import into the description a priority the sources withhold.

The second is that the paper’s later argument turns on the logical form of the polarity term, which Section 18 treats. A vocabulary that presented the assignment as the attribution of a sex would prejudice that form in the direction the later argument declines. The choice of term is therefore load-bearing, and it is recorded here for that reason. Part II closes here, having established that assignments at the lexical and cosmological levels vary independently and persist where the other is absent. Part III turns to the religious register, where the marks of divinity are the material and where the two traditions just introduced are treated at length. Section 11 supplies the vocabulary that Part needs, since the marks in question are habitually named together and the argument requires them apart.

Part III

The Religious Register

11 Personification and the Vocabulary of Its Description

Part III opens here with the vocabulary in which its four religious cases are described. Its objective is to separate marks of divinity that are habitually named together, so that a tradition may be described as carrying one of them heavily and another lightly without the description becoming a verdict on the tradition. The section defines four such marks, records what each is evidenced by, states the finding that the Chinese case yields when the marks are held apart, and notes a consequence for a companion study. The method is definitional, and each

definition is framed behaviourally, so that it may be applied to a record of what practices did.

11.1 Ritual Address

Definition 11.1. (Ritual address). A body is ritually addressed where offering, petition or observance is directed at it, so that a practice would fail of its object were the body absent from the practitioners' account of the world.

The mark is evidenced by ritual records, by the existence of an altar or a season of observance, by prescriptive texts assigning the practice to an agent, and by reports of what was asked. Its content is exhausted by the direction of the practice, and it leaves the conception of the body open: a body may be addressed as a person, as a power, or as a position within an order, and the record of the address alone will not say which.

The mark admits of two independent gradations that the cases in this Part require to be kept apart. One is the elevation of the address, meaning the standing of the party who performs it and the place of the rite within a ritual order. The other is its density, meaning how many parties perform it and how often. Section 14 treats a case in which the first is very high and the second very low, and Section 14.6 shows that running them together is what makes that case look paradoxical.

11.2 Narrative Individuation

Definition 11.2. (Narrative individuation). A body is narratively individuated where a figure identified with it has a name, a sex, kin, speech, intention and a history of acts, and where those attributes are transmitted as a story.

The mark is evidenced by narrative sources: chronicles, hymns, myths and the commentarial literature that transmits them. Its diagnostic is whether the figure can be the subject of a story in which something happens to it, since a name and a sex alone will support no narrative.

The mark admits of degree, and the degrees are what the religious cases in this Part are used to exhibit. A figure may possess a name and a sex while possessing little history, as Section 14 reports for the Chinese solar figures. A figure may possess an elaborate history while receiving scant observance, which is the Germanic configuration. And the degree may be disputed among specialists, as Section 13 reports for the sex of the Japanese solar deity, in which case the paper reports the dispute in place of scoring the case.

11.3 Functional Jurisdiction

Definition 11.3. (Functional jurisdiction). A body possesses functional jurisdiction where practitioners petition it about a determinate class of matters, so that a practitioner with a need of that class has a reason to approach it in particular.

The mark is evidenced by the content of petitions, by the occasions of observance, and by prescriptive and liturgical texts assigning classes of concern to particular figures. Longevity, misfortune, rainfall and the punishment of wrongdoing are the classes that recur in the material treated in Section 14 and Section 15.

The mark is distinguished from ritual address because the two come apart in both directions. A body may be addressed without being petitioned about anything in particular, which is the configuration Section 14 reports for the state solar rite. And a figure may hold a jurisdiction in the prescriptive literature while attracting little observance, which is what

would tell against the reading offered in Section 24.2. The mark is therefore stated in terms of what a practitioner with a given need has reason to do, and its evidence is what practitioners with such needs are recorded as having done.

11.4 Rank

Definition 11.4. (Rank). A body possesses rank where it is placed in an ordered hierarchy of figures, so that its standing is stated by naming what stands above it and what below.

The mark is evidenced by titles, by the order of figures in a canonical list, and by the protocols governing which figure is approached through which other. Its diagnostic is that a figure's standing can be stated without describing the figure at all, since a position in an ordering is fixed by its neighbours.

Rank and functional jurisdiction are distinguished here, and kept distinct through the remainder of the paper, because Section 24 rests a reading on their separability. A figure may hold high rank with a slight portfolio, and a figure of middling rank may hold a portfolio that reaches every household. The two are also held by different parties and changed by different acts: rank moves by promulgation, whether by a state conferring a title or a compiler fixing a canon, while a jurisdiction accrues and lapses with what practitioners bring.

11.5 The Separability of the Marks

Claim 11.5. (Separability of the marks). The four marks vary independently across the cases treated in this Part, and a tradition may direct heavy ritual address at a body it individuates lightly.

The Chinese case supplies the instance, and Section 14 presents the evidence. The sun there receives state observance at the highest level over a very long period while carrying a slight narrative and a slight portfolio. Described with the four marks run together, that configuration is hard to state at all, and the descriptions that result tend to oscillate between the claim that China had no sun god and the claim that it had one.

11.6 A Consequence Recorded for a Companion Study

A companion study by the author treats the passage by which a computed position in a calendrical system acquires a name, a characterization and finally an address, and presents the passage in stages. The Chinese solar material runs the stages in the reverse order, carrying address while characterization stays slight. The two cases together indicate that the ordering of those stages is one of presupposition and holds no developmental sense. The point is recorded here and is developed there. With the marks distinguished, the cases may be presented. Section 12 begins with the two traditions in which all four marks are carried heavily, since they supply the pattern against which the remaining cases have been read as deficient.

12 The Germanic and Mediterranean Cases of Solar Personification

The two cases in which the sun is personified as a substance are treated here, and a test that the following two sections apply is extracted from them. Its objective is to identify what distinguishes a theonym that coincides with the ordinary noun for a body from one that describes an operation or a position. The section reports the personifications, sets aside a feature that fails to discriminate between the traditions, states the test, and connects it to the

reconstruction reported in Section 7. The method is lexical, and the test it yields is a test on names.

12.1 The Personifications

The Germanic tradition personifies the sun as the goddess Sól, driving her course across the sky and pursued in the eschatological material, and the moon as the god Máni. The Roman and Greek traditions personify the sun as Sol and as Helios, both male, and the moon as Luna and Selene [57]. In each of the four cases the figure possesses a name, a sex, kin and a history of acts, so that all four score heavily on Definition 11.2, and in each case the narrative material is abundant enough that the scoring is uncontroversial.

Two features of the group are worth recording before the test is stated. The four figures are distributed across two branches of one family whose lexical assignments oppose one another, as Section 7 reports, so that within this group the personification level and the lexical level agree in each tradition while the traditions disagree with each other. And the degree of individuation is high in all four while the density of observance is uneven, which is a first instance of the separation that Definition 11.1 and Definition 11.2 are framed to permit.

12.2 A Feature That Fails to Discriminate

The chariot is common to these traditions and is widely reported as a shared Indo-European motif [57]. Its discriminating power within the group is therefore zero, and it is equally zero between the group and the Chinese material, where the sun is likewise conveyed and where the conveyance is elaborated in the received poetry.

The reason the motif discriminates nothing is worth stating, because it applies to a whole class of candidate features. Equipage, motion and daily course are attributes of the sun's observable behaviour. Any tradition that attends to the sun's behaviour at all has the material for such a narrative, and the presence of the narrative therefore reports the attention and leaves the tradition's manner of conceiving the body unreported. The same holds of the sun's brightness, its heat, its regularity and its disappearance at night, all of which are narrated widely and none of which separates one tradition's treatment from another's.

A feature that discriminates must be one that a tradition could have supplied otherwise, so that its presence records a choice the tradition made and had alternatives to. The formation of a name is such a feature. A tradition may name a celestial figure by the ordinary noun for the body, or by a description of what the figure does, or by the position it occupies, and the three are available to any tradition that names the figure at all. Section 12.3 states the test that follows, and Section 18 shows why the choice among these three is more than a curiosity of nomenclature.

12.3 The Test on Names

Claim 12.1. (The theonym test). Where the theonym of a celestial body is the ordinary noun denoting that body, the personification attaches to the body itself, and the figure and the body are lexically inseparable. Where the theonym describes an operation, a position or a role, the personification attaches to a place in a relation, and the figure and the body remain lexically distinct.

Sól is the Old Norse word for the sun. Sol is the Latin word for the sun. Helios is the Greek word for the sun. In these traditions a sentence about the god and a sentence about

the body are, at the level of the noun, the same sentence, and a speaker wishing to distinguish them must do so by other means.

Section 13 and Section 14 treat traditions whose principal solar figures are named otherwise. Amaterasu (the Heaven-Illuminating Deity, 天照) describes an operation. Xihe (the bearer of the suns, 羲和) names a figure who bears and bathes the suns, and the name is distinct from *ri*, the ordinary word for the sun. Dongjun (the Lord of the East, 東君) states a position. In these traditions a sentence about the figure and a sentence about the body are lexically distinct from the outset.

12.4 The Test at the Reconstructed Stage

The test has a bearing on the reconstruction reported in Section 7. Matasović argues that the parent language carried two words for the sun, a neuter abstract noun and a masculine noun that also served as the theonym [39]. A tradition holding an abstract noun apart from a theonym holds apart, at the level of the lexicon, the two things the test distinguishes. The paper reports the reconstruction as his and draws only this observation from it: the distinction the test uses is available within Indo-European itself, and the traditions treated here differ in whether they retained it for the sun.

12.5 The Standing and Reach of the Test

The test is a test on names and reaches no further. What the test reports is how a tradition's principal solar theonym is formed, and a report of that kind supports no conclusion about what speakers of the language believed, about the antiquity of the figure, or about the tradition's sophistication, and Section 18 takes it up for a purpose that concerns the logical form of names and leaves psychology aside. The test on names is applied twice in what follows. Section 13 applies it to a tradition whose principal solar figure is fully individuated and whose theonym describes an operation, and Section 14 to a tradition in which the marks come apart more widely still.

13 The Japanese Case and the Contested Formation of Amaterasu's Sex

The case from which the paper's opening observation was drawn is treated here, in the first of the three places where the form declared in Section 3.7 is applied. Its objective is to present the standing scholarly positions on the sex of the Japanese solar deity, to record what each rests on, and to state what follows for the paper's argument on each. The section reports the received position, reports the position holding the sex to be secondary, records one specialist's observation about the theonym, states the paper's preliminary reading, names what would settle the question, and sets aside two explanations that recur in general accounts. The method is the presentation of positions in the terms their holders use.

13.1 The Received Position

In the eighth-century chronicles the solar deity Amaterasu Ōmikami (the Heaven-Illuminating Great Deity, 天照大神) is female, occupies the head of the pantheon, and stands as the ancestress from whom the imperial line descends. The narrative material is abundant: the deity has kin, a quarrel with a sibling, a withdrawal into a cave and a return, and a grandson who descends to rule. On the vocabulary of Section 11 the figure scores heavily on narrative individuation, and the scoring is uncontroversial.

The reading of the figure as the sun itself, and as female from the beginning, is the position of the classical commentarial tradition, of which Motoori Norinaga's eighteenth-century study of the chronicles is the major monument. On that reading the chronicles report a tradition older than themselves, and the sex of the deity is part of what they report.

The position matters to this paper for a reason beyond its content. If the received reading holds, the Japanese case is an instance of a strong personification assignment carried where the lexical level is unavailable, which is what Claim 10.1 requires. If the reading treated in Section 13.2 holds, the case is that and something further. Section 13.4 states why the paper's argument is served either way.

13.2 The Position Holding the Sex to Be Secondary

Matsumae argued that the figure at the head of the chronicles was formed from local solar deities of the Amateru (heaven-shining, アマテル) type, several of them male and worshipped by coastal lineages, and that the sex of the resulting figure changed in the course of the centralization of the cult [40]. Teeuwen and Breen, in their history of the Ise shrines, hold that the deity was male at the period when the cult was established at Ise, and that the feminization was carried out by the compilers of the chronicles under the reign of the female sovereign Jitō, with the deity's son and grandson standing in a relation to the deity that parallels the sovereign's own succession [54].

The two positions differ in date and in mechanism, and they agree that the sex of the figure as the chronicles present it is the outcome of a process the chronicles do not report.

13.3 Matsumae's Observation on the Theonym

One observation in Matsumae's study bears directly on Section 12. He states that the name of the deity is a neutral name carrying no implication of feminine gender [40]. The observation is his, and the paper claims no part of it.

The observation is recorded here for two reasons. The first is that it is a specialist stating, on Japanese material and for his own purposes, the distinction that Claim 12.1 states generally. The name is formed from a description of what the figure does, and a name so formed carries no information about the figure's sex, where a name that is the ordinary noun for the body carries whatever the noun carries.

The second is that his use of the observation runs in the direction the paper's argument would predict. He deploys it within an argument that the sex of the figure was fixed later than the name, and the deployment is available to him precisely because a name of that formation leaves the matter open. A tradition whose solar theonym is the ordinary noun for the sun has no such latitude, since the sex of the figure is then carried by the noun's gender wherever the language has one.

The paper takes the observation and leaves the argument it serves, since the argument belongs to the dispute reported in Section 13.2 and the paper takes no position there.

13.4 The Paper's Preliminary Reading

The paper's reading, offered as preliminary and placed after the positions in place of among them, is that the dispute concerns a matter of fact about which the paper has no standing, and that its argument is served by either outcome.

On the received position, Japan carries a strong personification assignment with no lexical level available to carry one, which is the configuration Claim 10.1 describes. On the

position holding the sex to be secondary, Japan carries in addition a datable formation of a personification assignment under identifiable political conditions, which is a further instance of Claim 8.1's second half: where a divergence in solar sex is explained by specialists, the explanation offered is historical. The second outcome would strengthen Section 24 and the first would leave it as it stands.

13.5 The Evidence That Would Settle the Question

The question belongs to Japanese religious history and turns on evidence the paper is unable to weigh. Three bodies of it are at issue. The first is the early record of the Ise cult, and what it says about the deity worshipped there before the chronicles were compiled. The second is the relation of the Amateru cults of the coastal lineages to the Yamato centre, and whether the resemblance Matsumae reports is a matter of descent or of later assimilation. The third is the compositional history of the chronicles themselves, and how far their treatment of the deity can be dated to the reign under which they were compiled.

An answer would be an answer about a particular formation at a particular date, which is the form Section 23 identifies as the surviving answerable form of the general question. Section 26 puts the question to that literature in its own terms and states what an answer would do to Section 24.4.

13.6 The Explanations Set Aside and the Grounds for Setting Them Aside

Two accounts of the female Japanese sun recur in general treatments and are set aside here, with the reasons stated so that the setting aside may be checked.

The first derives the sex from the sun's role in a rice-growing society, where its warmth is experienced as nurture. The second derives it from climate, holding that a temperate sun is experienced as gentle and a desert sun as harsh, so that gentle suns become female and harsh suns male.

The two accounts each explain a variable outcome by a constant. Rice agriculture and solar warmth are found in traditions with male solar deities, and the climatic account is contradicted directly by the Semitic case of Section 8, in which the tradition standing as the type of solar harshness carries a feminine noun for the sun and, in its Levantine branch, a solar goddess. Section 23 states the general form of the objection, and Section 27 records the exclusions. The Japanese case carries a strong personification assignment whose formation is disputed. Section 14 treats the case in which personification stays thin while observance remains heavy, which is the configuration the paper's second question concerns.

14 The Chinese Case and the Separation of Sacredness from Personhood

The case in which the four marks of Section 11 come apart most widely is treated here. Its objective is to establish that a tradition may direct heavy ritual address at the sun while individuating it lightly, and to separate two questions that discussions of the Chinese sun run together. The section reports the solar figures, reports the state observance, states the finding, examines an explanation that is frequently offered and sets it aside with reasons, and closes by distinguishing the two questions. The method is report, with the paper contributing Claim 14.1 and the separation of the questions in Section 14.6.

14.1 The Solar Figures

Solar figures are present in the early material. *Xihe* in the *Shanhaijing* (Classic of Mountains and Seas, 山海經) bears the ten suns and bathes them. The *Lord of the East*, in the *Jiuge* (Nine Songs, 九歌) of the *Chuci* (Songs of Chu, 楚辭), is glossed by Zhu Xi's commentary as the solar deity, and the piece organizes sunrise, the mythical tree, the dragon team and the asterisms into a single scene of celestial motion. The three-legged bird within the sun recurs in Han iconography and in the *Huainanzi* (Master of Huainan, 淮南子).

Later tradition supplies solar deities of a fuller kind. Esposito's study of the Shangqing practices of light treats a Daoist solar deity and a lunar goddess together with a discipline of solar visualization [16]. The tradition possessed the means to personify the sun and exercised them.

14.2 The State Observance

Observance directed at the sun is attested at the highest level of the state cult over a very long period. The *Liji* (Record of Rites, 禮記) prescribes sacrifice to the sun in the east and to the moon in the west, and the *Tongdian* (Comprehensive Institutions, 通典) collects the ceremonies of the sovereign's audience with the sun. The observance continued in the altars of the imperial capitals to the close of the last dynasty.

Two features of the prescription bear on the argument. The sun is placed by direction and paired with the moon, so that the ritual text states its position in a relation before it states anything else about it. And the ceremonies are prescribed for the sovereign, which Section 14.5 takes up.

14.3 The Finding

Claim 14.1. (Sacredness apart from personhood). The Chinese sun carried heavy ritual address and slight narrative individuation over the same long period, so that the degree of sacredness accorded a body and the degree to which it is individuated as a person are separable in a single tradition.

The claim is a statement about a configuration and carries no comparative content. It records that the two marks came apart and leaves the cause open. Section 15 supplies the encoding in which the Chinese material describes such figures, and Section 24 offers two readings of the configuration, each with the conditions that would tell against it.

14.4 An Explanation Frequently Offered

The explanation most often given holds that the throne monopolized solar sacrifice, that private observance was in consequence foreclosed, and that the sun therefore failed to acquire the popular cult through which figures are elaborated. The account has an evident ground in Section 14.2, since the ceremonies are indeed prescribed for the sovereign. The paper nonetheless sets it aside, for four reasons, each of which is a matter of record in place of interpretation.

The first concerns the site of the explanandum. The rite the throne reserved is itself conducted in an impersonal idiom, addressing the sun by direction and in a pairing. Slight individuation is therefore present at the centre of the monopoly, and an account of who may perform a rite leaves the character of that rite unexplained.

The second is a case within the same ritual system. The feng-shan sacrifices at Taishan

(Mount Tai, 泰山) were reserved to the sovereign more strictly than solar sacrifice, and the mountain's deity was nonetheless elaborated into a figure with kin and an underworld administration, whose temples spread through the empire in the wake of successive imperial enfeoffments. Hansen's study of the grant of titles in the Song shows the mechanism at work generally: imperial recognition was a principal route by which a local cult became a national one [27, 11]. Imperial association therefore amplified cults, and the direction of the proposed mechanism is contrary to the direction the evidence takes.

The third is the neighbouring case. The shrines at Ise operated under a prohibition on offerings from any person other than the sovereign, which is a stricter reservation than anything in the Chinese solar material. The deity there is the most fully individuated solar figure in the region, and the shrines later drew popular devotion on a very large scale.

The fourth is that solar observance among the population existed, thinly. A birthday of the solar lord was kept, with its own cake, and a solar scripture circulated. An account resting on prohibition leaves unexplained a practice that was thin while present.

14.5 The Question of Popular Density and the Question of Characterization

Two questions have been run together in the material just examined, and separating them is the section's last contribution.

The first asks why no dense popular cult of the sun developed. The second asks why the sun was individuated lightly even within the rites that did address it.

Monopoly is a candidate answer to the first question, and the case of Mount Tai tells against monopoly even there. As an answer to the second question monopoly is unavailable, since the second question concerns the character of the reserved rite itself. The question this paper inherited from its opening discussion is the second, and Section 24 answers it with material drawn from Section 15. The question this section leaves open is what distinguishes the solar figures from the other figures of the same pantheon. Section 15 describes the encoding within which those figures are designated, and Section 24 draws on it for an answer.

15 The Office Form of Celestial Divinity and the Models of Divinity in Dispute

The fifth encoding level is presented here in the material that motivated its definition, in the second of the three places where the form declared in Section 3.7 is applied. Its objective is to describe the encoding of celestial figures as holders of office, to place that description within a scholarly dispute about how far the model reaches, and to refuse a comparative reading that the material invites. The section describes the encoding, states the standing model and the position of its principal opponent, gives the paper's preliminary reading, reports a second instance from Japan, refuses the comparative reading with evidence, and connects the encoding to Part IV. The method is description followed by the presentation of positions.

15.1 The Encoding

A large part of the Chinese celestial pantheon is designated by titles that state a position and a standing in place of a character. The title *Great Emperor of the Purple Tenuity at the North Pole* names a point of the sky, a region of the sky, and an imperial rank. The designations *stellar lord* and *imperial lord* state rank while stating nothing of a biography. The five planets, the lodges, the enclosures and the Dipper are arranged within a graded order in which each figure's standing is given by what stands above it and what falls to it.

Two components of the encoding are held apart here, as Definition 4.5 requires. The rank places the figure in the hierarchy. The jurisdiction states the class of matters about which it is approached. The distinction is available in the sources themselves, since a title states the first and a body of prescriptive and liturgical material states the second, and Section 24 rests a reading on their coming apart.

15.2 The Standing Model

The reading of the Chinese supernatural order as articulated on the model of the imperial administration has a substantial literature, of which the following are the works consulted here. Weber treats the relation of Chinese religion to bureaucratic organization [56]. Needham describes the correlative ordering of the heavens in administrative terms [42]. Wolf's study presents the Chinese supernatural as organized on the pattern of the imperial state, with its gods, ghosts and ancestors standing in relations drawn from the living order [60]. Feuchtwang develops the reading for popular religion [17]. Hansen's work on the grant of titles shows the state and local cults transacting in the currency of rank [27].

The paper concedes this reading in full and claims no part of it.

15.3 The Position of Its Principal Opponent

Hymes argues that the bureaucratic model, taken as an account of Chinese divinity in general, is insufficient, and he sets beside it a personal model in which a deity stands to a devotee in a direct relation unmediated by office, drawing his evidence from Song and modern local religion [32]. On his account the two models coexisted, were available to the same communities, and were selected between according to the occasion and the party approaching.

The force of the objection, for present purposes, lies in what it denies. The bureaucratic model is not merely a description of titles; taken generally it holds that the relation between a devotee and a deity is itself modelled on the relation between a subject and an official, so that approach proceeds through channels, merit is recorded, and appeal runs upward. Hymes's evidence is of devotees approaching deities in a manner that fits none of that, and his conclusion is that the bureaucratic idiom is one repertoire among at least two.

The dispute is live, and the paper takes no position in it. What the paper needs from the material is narrower than what the dispute concerns, namely that titles of the form described in Section 15.1 exist and state a rank and a jurisdiction, which neither party contests. Section 15.4 nonetheless offers a reading of the dispute, because the reading follows from the scheme and can be tested.

15.4 The Paper's Preliminary Reading

The paper's reading, offered as preliminary, is that the two models describe assignments at different levels of Section 4, and that the dispute is in that respect an instance of the paper's own subject.

An account in terms of rank and jurisdiction is an account at the level of office. An account in terms of a direct relation between a deity and a devotee is an account at the level of narrative individuation together with ritual address. Hypothesis 4.6 holds that these vary independently, and a tradition in which a figure carries a title, a portfolio, a biography and a personal devotion carries assignments at three levels at once. On this reading the disputants would be describing different levels of the same material, and the question of which model is correct would be replaced by the question of which level a given source reports.

The reading is offered for testing, and it falls short of a resolution. The reading would be told against by evidence that the two models make incompatible claims at a single level, which is how Hymes’s argument would most naturally be read by a reader who declines the paper’s scheme.

15.5 A Second Instance

The conferral of graded court ranks upon deities by the state is recorded for Japan as well, where *shinkai* (court rank for deities, 神階) placed *kami* on a scale of ranks continuous with that of officials. The practice is reported in the standard accounts of Japanese institutional religion, and the paper has verified it at reference level only, which Section 27 records. Its relevance here is that the encoding of divinity by rank is exhibited by a second tradition independently, so that the level defined in Definition 4.5 is a comparative category and not a description of one case.

15.6 The Comparative Reading Refused

The material of this section invites a comparison that the paper refuses, and the refusal is placed in the text in place of a note, because the invitation is strong.

The comparison holds that one civilization personified its celestial bodies as individuals while another ranked them as officials, and the comparison is usually drawn between Greece and China. The comparison fails on the evidence.

The Christian tradition ranks its celestial beings in a graded order. The treatise on the celestial hierarchy transmitted under the name of Dionysius the Areopagite sets out nine orders in three triads, arranged by proximity to the divine and by the offices they discharge, and the scheme governed the angelology of the Latin and Greek churches for many centuries [46]. Mesopotamian material presents the gods as an assembly under a presiding figure, a structure examined in a classic study [33], and the Anatolian pantheon of Section 9 is a state pantheon with a head.

Office-form heavens are therefore attested across the traditions this paper treats and beyond them. The comparison holds only where the Greek material is taken as the whole of the European evidence, and the paper declines it on that ground.

15.7 The Connection to Part IV

One feature of the encoding is carried forward and is treated in Section 18.

A title of the form *Great Emperor of the Purple Tenuity at the North Pole* states its relation on its face. The point of the sky, the region and the rank are all present in the name, and a reader who knows the name knows what the figure is placed against. A polarity assignment of the form *ri shu yang* (*the sun belongs to yang*, 日屬陽) suppresses its relatum, since the term of comparison is left unstated. A theonym of the form *Sol* carries no relatum at all.

Three regimes therefore appear in a single variable, namely how much of a term’s relational structure survives in its name. Section 18 states the variable, and Section 19 draws the consequence. One body of explanation remains to be considered before Part III closes. Section 16 concedes the accounts that the cognitive science of religion offers for part of this material, and marks the point at which their coverage ends.

16 Agency Attribution and the Reach of Its Explanation

Part III closes here with a concession of the body of explanation that covers part of its material, and with a mark against the point where that coverage ends. Its objective is to identify what the cognitive science of religion accounts for in the cases treated, to report a qualification that specialists in that field have themselves raised, and to state the residue that motivates Part V. The section concedes the accounts, reports the qualification, states the limit, and names the form an adequate account of the residue would take. The method is concession followed by delimitation.

16.1 The Accounts Conceded

Guthrie's account of religion as systematic anthropomorphism holds that the perception of agency in ambiguous phenomena is a general and cheap operation of the human mind [20]. Barrett's formulation of an agency-detection device, built on Guthrie's work, holds that the mechanism is readily triggered and that its outputs are candidates for religious elaboration [2]. Boyer's account holds that concepts of supernatural agents recur because they combine intuitive expectations with a small number of counterintuitive features [8].

Taken together these accounts explain a good deal of the material treated in this Part. A phenomenon that arrives suddenly, from a direction, with force, and with consequences for those beneath it invites the question of who is acting, and the elaboration of thunder into a figure who punishes falls under the accounts without remainder. The paper concedes them and claims no part of them.

The material treated in Section 15 is likewise accounted for elsewhere. The articulation of the sky in the vocabulary of an administration is described by Needham and by the scholars named in that section [42, 60]. Both halves of the elaboration observed in the Chinese celestial material therefore have owners.

16.2 A Qualification Raised Within the Field

Westh examines the evidence usually adduced for the claim that people make inferences about gods spontaneously and on intuitive ontological assumptions, and concentrates on the narrative comprehension experiments that are the principal experimental support for it [58]. His conclusion is that the evidence bears a narrower load than the general claim built upon it.

The paper reports the qualification for a reason internal to its own argument. The accounts conceded in Section 16.1 are frequently cited at a level of generality that would settle questions of the kind Part V asks, and a reader who took them at that level might conclude that the variation this paper treats has already been explained. The qualification is evidence from within the field that the accounts are not established at that level, which leaves the residue of Section 16.3 standing as a residue.

The paper takes no position on the psychological questions at issue, and cites Westh for the state of the evidence and for nothing further.

16.3 The Limit

Claim 16.1. (The limit of agency accounts). Accounts of the elaboration of a phenomenon into an agent explain why some phenomena are elaborated and others left

alone, and they leave unexplained the variation across traditions in the treatment of a single phenomenon.

The ground of the claim is that the properties these accounts appeal to are properties of the phenomenon. Suddenness, directionality and force belong to thunder wherever thunder occurs. Regularity, ubiquity and coupling to the seasons belong to the sun wherever the sun rises. The explanandum of Section 14, by contrast, varies: the sun is heavily individuated in some of the traditions treated in this Part and lightly individuated in others, while the sun itself is the same in all of them.

An account of that variation must therefore appeal to something that varies with it. The properties of the phenomenon are unavailable for the purpose, and so is any property of human cognition held to be general.

16.4 The Form an Account of the Residue Would Take

Part V offers two readings of the residue, and both are structural in the same sense: each appeals to a feature of the arrangement into which a celestial body is placed and not to a feature of the body or of the mind observing it. The first concerns the relation between rank and jurisdiction within an office-form pantheon. The second concerns the structure of the legitimacy claim a polity makes. Each is offered with the finding that would tell against it, as Section 3.7 requires, and both are offered short of establishment. Part III closes here. Its cases have established that the marks of divinity vary independently, and its last two sections have established that the accounts available for the variation appeal to properties that stay constant while the variation does not. Part IV turns to the second difficulty named in Section 1, which concerns the logical form of the polarity terms, and it supplies on the way the vocabulary that Part V uses to answer the question left open here.

Part IV

The Form of Polarity Terms and the Work of the Instrument

17 The Allocation of Ontological Work Among Entities, Properties, Relations, Constraints and Contexts

Part IV opens here by replacing the question that comparative discussions of these matters usually ask. Its objective is to substitute, for the question whether a tradition holds a relational or a substantial ontology, a question about how a tradition distributes work among five terms. The section states the five terms, states the question the substitution yields, records why the substitution is preferable, treats the office encoding of Section 15 as a construction from two of the terms, and declines a debate about Chinese grammar, from which the paper's claims are made independent. The method is the statement of an analytical vocabulary and of the questions it makes askable.

17.1 The Analytical Terms and Their Definitions

Five terms are used in what follows, and they are used descriptively.

An *entity* is what a statement is about. A *property* is a one-place predicate of an entity. A *relation* is a predicate of two or more entities. A *constraint* is a rule governing how a configuration of entities, properties and relations succeeds another. A *context* is whatever is held fixed while the other four are stated.

The terms are ordinary, and the paper claims each of them from common use. Their use here is to make a distribution visible.

17.2 The Question the Substitution Yields

The question whether a tradition holds a relational or a substantial ontology has attracted a warning from comparative philosophers, on the ground that traditions on both sides of the supposed divide contain resources of both kinds, and that a contrast stated in these terms exaggerates the difference it purports to find. The paper accepts the warning and asks a different question.

The question asked here is how a tradition distributes work among the five terms. Three distributions are worth naming, because the material treated in Parts II and III exhibits all three.

A relation may be reported as a property, by fixing one of its arguments and dropping the fixed argument from the statement. A property may be treated as an essence, by taking it to state what the entity is in a way that survives every change of context. And a constraint may be located either outside the entities, as a law governing their behaviour, or in the pattern that their relational change exhibits.

The three distributions just named are questions about statements and about the practices that produce them. Questions of that kind can be put to a source, and an answer to them can be supported by what the source says.

17.3 The Grounds for the Substitution

Three reasons govern the substitution, and the first is the strongest.

The question of which ontology a tradition holds admits of evidence for either answer, since a tradition of any size will supply passages on both sides. The question of how a tradition states a given assignment admits of textual evidence directly.

The second reason is that the substituted question is neutral in a way the original is not. To ask whether a tradition is relational is to ask whether it possesses something, and the answer is heard as a verdict. To ask how it distributes work among five terms is to ask about an arrangement, and arrangements admit of description without ranking, which Section 3.8 requires of this paper throughout.

The third is that the substituted question applies to European material as readily as to Chinese material, and Section 18 applies it to both.

17.4 The Office Encoding Construed from the Terms

The encoding described in Section 15 is definable from the terms just stated, and the definition is worth making explicit because the interest of that encoding lies in its form.

An office assignment states, for a figure, a position within an ordering of figures and a class of matters falling to it. The first component is a relation, since a position in an ordering is stated by what stands above and below. The second is a constraint, since a jurisdiction states what may be brought to the figure and with what expectation. An office assignment therefore compresses a relation and a constraint into a single designation, and the designation may then be used as though it were a property of the figure.

The compression is the point. Section 18 distinguishes compressions by how much of the compressed structure survives in the resulting designation, and the office form stands at one

end of that variable.

17.5 A Debate Declined

A long debate concerns whether the grammar of classical Chinese, and in particular the behaviour of its nouns, carries implications for the ontology of Chinese thought. Hansen's mass-noun hypothesis proposed such an implication [25, 26]; Harbsmeier, Robins and others have contested both the linguistic description and the inference drawn from it [28, 48], and Graham, who had been sympathetic, later moved toward the critics [19].

The paper declines the debate, and the declining is a feature of its construction. Every claim made in Part IV concerns the logical form of statements as the doctrinal literature itself glosses them, and each is supported by a doctrinal gloss quoted from within the tradition. A claim of that kind is untouched by the outcome of a dispute about the syntax of nouns. Readers who hold Hansen's thesis and readers who hold Harbsmeier's may both use what follows. The terms being fixed, the paper's central analytical claim may be stated. Section 18 states it, beginning with the concession that the ground it stands on is occupied.

18 The Suppressed Relatum and the Rule of Its Recovery

The paper's central analytical claim is stated here, and the statement opens with a concession, because the ground the claim stands on is occupied. Its objective is to establish that the suppression of a relatum is a feature of natural language generally, and that traditions differ in whether they maintain a doctrinal rule for recovering what has been suppressed. The section concedes the relational reading of the polarity terms to the scholars who established it, defines suppression and recovery, states the universality of suppression, states the discriminating variable, places the three regimes of Section 15 on that variable, and admits the strongest qualification the section faces. The method is definition followed by application to the material of Parts II and III.

18.1 The Concession

The relational and context-dependent character of *yin* and *yang*, whose application to a thing holds only relative to something else, is established scholarship, and no part of it is claimed here.

Graham's study of correlative thinking sets out the relational character of the pair [18]. Hall and Ames hold that yang and yin are in no way to be understood as cosmic principles or as ontological contrasts rooted in the nature of things [23, 24]. Wang's study states that the terms take on meaning only when used to express a particular relationship [55]. Jiang gives the point in the form of an example, that a young man is yang relative to his sister and yin relative to his father [35]. Black treats the gendered application of the classification [6].

The paper's question begins where these accounts leave off. Given that the predicate is relative, what keeps the relatum available to a reader, and what happens where it ceases to be available.

18.2 Suppression and Recovery Defined

Definition 18.1. (Suppression). An argument of a relation is suppressed when it is fixed at a value and dropped from the statement, so that a two-place statement is uttered in one-place form.

Definition 18.2. (Recovery rule). A recovery rule is a standing doctrinal instruction, transmitted with the vocabulary itself, for restoring a suppressed argument, so that a practitioner who encounters a one-place statement is directed to ask what it was stated against.

The definitions are framed to be checkable. A recovery rule is present where the doctrinal literature contains an instruction of that form, applied to that vocabulary, and transmitted with it.

18.3 The Universality of Suppression

Claim 18.3. (Universality of suppression). Suppression is a feature of natural language and belongs to no tradition in particular, since the surface form of a one-place statement is available in every language for the report of a relation with an argument fixed.

The evidence is that the surface forms coincide. The statement *the sun belongs to yang* and the statement “the sun is bright” have the same shape, and both leave a term of comparison unstated, since brightness is stated against a standard as surely as yang is stated against a contrast. A reader who took the first to reveal something about Chinese thought, while taking the second to be an ordinary English sentence, would be reading a difference into a shared property of language.

The claim matters because a long tradition of comparison has treated the one-place form of Chinese polarity statements as evidence about Chinese ontology. On the present account the one-place form is evidence about language, and the difference must be sought elsewhere.

18.4 The Discriminating Variable

Claim 18.4. (The recovery rule as the discriminating variable). Traditions differ in whether the vocabulary that suppresses a relatum is transmitted together with a rule for recovering it, and the presence of such a rule is checkable in the doctrinal literature.

The Chinese polarity vocabulary is transmitted with such a rule, in two forms.

The first is the instruction that the terms are said relatively, which is the point the scholars cited in Section 18.1 report from the literature. The second is structural, and is the stronger of the two: the vocabulary contains nested forms, in which a term is applied within the range of its own opposite. The medical classic *Suwen* (Basic Questions, 素問), in the chapter Jinkui zhenyan lun (Discourse on the True Words of the Golden Chest, 金匱真言論), classifies the bodily organs by such nested terms, so that a thing may be the yang within yang or the yin within yang. A nested term is unusable by a reader who has forgotten what it is stated against, since its very form requires two contrasts to be held at once.

The European philosophical vocabulary of substance and accident carries an instruction of the opposite tendency. There the one-place form is treated as informative about what a thing is, and the question of what a predication was stated against is a question about accidents in place of a question about the predicate.

The paper draws no ranking from this. Section 19 states what follows, and what follows is a criterion applying to both.

18.5 The Regimes of Relatum Preservation

Claim 18.5. (Relatum-preserving compression). Designations differ in how much of the relational structure they compress survives in the designation itself, and the material of Parts II and III exhibits three regimes of this variable.

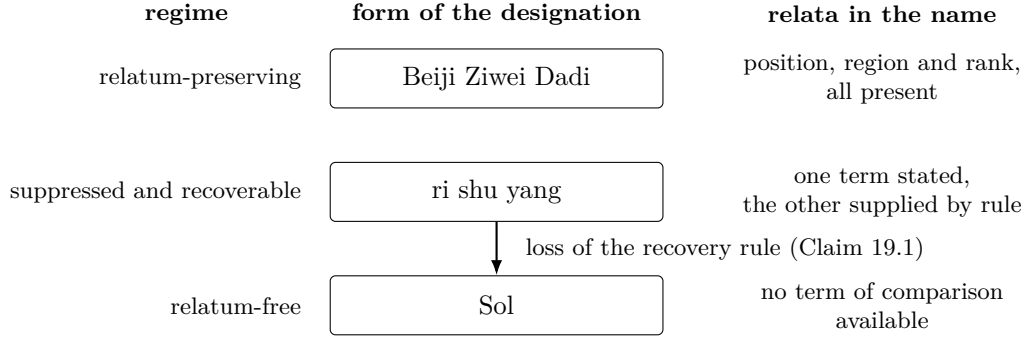


Figure 2: The three regimes of Claim 18.5, ordered by how much of a term’s relational structure survives in the designation itself. An office designation states its relata on its face. A polarity predicate suppresses one term and is transmitted with a rule for recovering it. A substance-form theonym carries no term of comparison. The passage described in Claim 19.1 moves a designation from the second regime to the third, and consists in the loss of the rule.

Figure 2 sets the three side by side. An office designation carries its relata on its face. The title *Great Emperor of the Purple Tenuity at the North Pole* states a point of the sky, a region of the sky and a rank, so a reader who knows the name knows what the figure is placed against, and a recovery rule is idle here, since the arguments remain in view.

A polarity designation suppresses its relatum and requires a rule. The statement *the sun belongs to yang* states one term of a contrast and leaves the other to be supplied, and Section 18.4 records the rule that supplies it.

A substance-form theonym carries no relatum and admits of no recovery. Sol is the Latin word for the sun, and the name states a body and leaves position, contrast and rank unmentioned. What a reader learns from the name is that the figure is the sun.

The three regimes lie on one variable, and Claim 12.1 and Claim 18.4 describe the two ends of that variable and its middle. At the variable so described, the religious material of Part III and the analytical material of Part IV are the same subject.

18.6 The Qualification the Section Faces

The claim of Section 18.4 is a claim about a vocabulary in the usages where the rule holds, and a qualification has been raised in the specialist literature that bears on its scope.

Tadd, examining the commentary attributed to Heshanggong, distinguishes usages in which the polarity terms operate as modes from usages in which they operate more nearly as substances, and argues that a uniformly relational reading of the Han material is too simple [52]. If that is right, the recovery rule holds unevenly across the corpus, and the claim of Section 18.4 is correspondingly indexed to the usages in which it holds.

The paper accepts the indexing and states it here in place of defending against it. What the claim requires is that the rule be present and transmitted, which the nested forms establish. How far it reaches across the corpus is a question for the specialists, and Section 26 puts it to them. The recovery rule having been defined and located, its loss may be described. Section 19 states what follows where a vocabulary outlives the instruction that accompanied it.

19 The Loss of a Recovery Rule and the Production of an Essence

The consequence of Section 18 is drawn here. Its objective is to define, in terms of the suppression and recovery just stated, the passage by which a relational position comes to be treated as what a thing is, and to obtain from the definition a criterion that can be applied to a text. The section states the passage, concedes the tradition that owns its general description, states the criterion and what distinguishes it from the general description, and records the recursive structure that supports the Chinese half of the argument. The method is definition followed by concession followed by delimitation.

19.1 The Passage

Claim 19.1. (Ontologization as suppression without recovery). The passage from a relational position to an essence proceeds in three steps. A relation is stated with one argument fixed. The fixed argument is dropped from the statement, leaving a one-place predicate. The rule for recovering the dropped argument ceases to be transmitted, and the one-place predicate is thereafter read as stating what the entity is.

Set out for the case in hand, a statement of the form *the sun is yang relative to the moon* becomes *the sun is yang*, and becomes at the third step *being yang is what the sun is*. Nothing is added at any step, and what is lost at the third step is an instruction.

The passage stated in this form has a property worth marking. Its first two steps are ordinary and occur constantly, in every language and in every technical vocabulary. Only the third step produces the result that comparative discussions of these materials have found remarkable, and the third step is a loss.

19.2 The Tradition That Owns the General Description

The general phenomenon has a settled description in the sociology of knowledge, and the paper concedes it.

Berger and Luckmann define reification as the apprehension of the products of human activity as though they were something other than human products, and they name among its forms the apprehension of such products as facts of nature or as results of cosmic laws; they hold further that reification implies a forgetting of authorship, in which the relation of producer to product drops out of view [5]. The formulation stands in a longer line, in which Lukács describes a relation between persons taking on the character of a thing [37], and Honneth reconstructs the notion as a forgetting of a prior recognition, a reconstruction that has itself been contested [30].

Claim 19.1 falls under that description without remainder, and the paper claims no part of it. What is forgotten in their accounts is the producer. What is forgotten here is the relatum. The shape is the same and the argument dropped is different.

19.3 The Criterion and Its Addition to the Conceded Description

Claim 19.2. (The criterion of harmless suppression). Suppression is harmless where the vocabulary is transmitted with a recovery rule, and it becomes ontologization where the rule ceases to be transmitted; and the presence of the rule is decidable from the doctrinal literature of the tradition in question.

What the criterion adds to the description conceded in Section 19.2 is a condition that can be checked at a date. An account of reification states what has happened where a product is

treated as a thing, and it identifies the phenomenon. A criterion turning on the transmission of a rule allows the question to be put to a particular vocabulary in a particular period, and answered by examining what that period's doctrinal literature instructs. Section 18.4 gives the Chinese instance of a rule present in the literature, and Section 26 asks the specialists whether the rule's transmission can be traced and where it thins.

The criterion is offered in that spirit, as a question-generating device. Its value depends entirely on whether the questions it generates can be answered with the evidence specialists possess, and Section 26 is where that is tested.

19.4 The Recursive Structure

The Chinese half of the argument rests on a structural feature of the vocabulary, and this subsection states it in the form the tradition gives it.

The classical formulation in the *Xici* (Appended Statements, 繫辭) appendix of the *Zhouyi* (Zhou Changes, 周易) proceeds from a single origin to two figures, from two figures to four images, and from four images to the eight trigrams. The formulation describes one binary operation applied repeatedly, and each application is made within the range established by the last.

Two consequences follow for the present argument, and both are modest.

The vocabulary produced by such an operation is inherently relative, since a term at the second application is defined within the range of a term at the first, and a reader who has forgotten the first cannot apply the second. Recursion of this kind is therefore a structural bar to the third step of Claim 19.1, holding for as long as the recursive forms remain in use.

And the nested forms recorded in Section 18.4 are instances of the same operation applied to a different subject matter, so the medical and the divinatory vocabularies exhibit one structure. Section 21 treats the system in which that structure is developed furthest. The passage described here concerns what happens to a polarity term over time. Section 20 concerns a different matter, namely an ambiguity within such a term at any time, and resolves with it the difficulty from which the discussion behind this paper began.

20 Level and Phase in a Polarity Assignment

The difficulty from which the discussion behind this paper began is resolved here. Its objective is to distinguish two readings of a polarity term that the tradition employs together and leaves unmarked, and to show that the apparent tension between a standing assignment and a doctrine of reversal dissolves once the readings are separated. The section defines the two readings, records the lexical evidence that both are present in the technical vocabulary, states the compatibility of the two statements at issue, derives the doctrine of reversal as a consequence of the phase reading, and bounds the claim. The method is definition followed by a short derivation.

20.1 The Level Reading and the Phase Reading

Definition 20.1. (Level reading). Under the level reading, a polarity term states the position of a quantity against a reference, so that a thing is yang where the quantity stands above the reference.

Definition 20.2. (Phase reading). Under the phase reading, a polarity term states the direction in which a quantity is changing, so that a stretch of a cycle is yang where the

quantity is increasing.

The two readings agree in their assignment for part of a cycle and disagree for another part, which is what makes their separation worth drawing. A quantity may stand above its reference while decreasing, and may stand below it while increasing.

20.2 The Lexical Evidence

The level reading and the phase reading are both present in the technical vocabulary, and the phase reading is present in the name of the system treated in Section 21. The twelve hexagrams that carry the annual cycle are called the *xiaoxi gua* (waning-and-waxing hexagrams, 消息卦), and the two characters of the name mean decline and growth. The series is named for directions of change and is divided into the growing group and the declining group on that basis.

The level reading requires no separate evidence, since it is the reading under which the sun belongs to yang and the moon to yin, which is the assignment Section 10 reports.

20.3 The Compatibility of the Two Statements

Claim 20.3. (Compatibility). The statement that the sun belongs to yang is a statement under the level reading, and the statement that yin is born at the summer solstice is a statement under the phase reading; the two are consistent, and their joint assertion requires no reassignment of the sun.

The difficulty the two statements appear to raise is that a thing said to be yang is said in the same breath to give rise to yin. Under the separation just drawn there is no difficulty to resolve. The first statement places the sun above a reference on a scale of brightness, heat and activity. The second states that at a certain point in the annual cycle the quantity that had been increasing begins to decrease. The subjects of the two statements differ, and so do their readings of the term.

The resolution just given draws a distinction the sources do not draw, and the paper therefore states the extent of its claim. The claim is that the two statements are consistent and that the distinction shows why. Whether any practitioner drew the distinction is left entirely open, and Section 20.5 restates the limitation.

20.4 The Derivation of the Doctrine of Reversal

Proposition 20.4. (Reversal under the phase reading). Let a quantity vary continuously and be bounded above. Then at a maximum its direction of change reverses. Under the phase reading, in which yang names increase and yin names decrease, the statement that yin arises at the height of yang states this and reaches no further.

The proposition is elementary and is stated because of what follows from its elementary character. Under the phase reading, the doctrine that a maximum passes into its opposite requires no separate principle, no additional law of transformation and no metaphysical commitment. The doctrine follows from the phase reading together with boundedness.

The placement of the hexagrams reported in Section 21 bears on the proposition directly. The all-yang figure is assigned to the month before the solstice, and the solstice itself is assigned to the first figure carrying a yin line. Extremum and reversal are placed at the same point in the calendrical assignment, which is what the proposition would require of a system constructed under the phase reading.

20.5 The Boundary of the Claim

The claim of this section concerns the consistency of statements and reaches no further.

The claim supports no conclusion about what practitioners intended, since the distinction between the readings is the paper's and the sources are silent on it. The claim supports no conclusion about the sophistication of the tradition, which Section 3.8 forbids in any case. And the claim supports no reading of the doctrine of reversal as an anticipation of any modern result, a temptation Section 27 records among the readings this paper declines.

What the section establishes is narrower and is enough for the argument: two statements that have been read as standing in tension are consistent, and the appearance of tension arises from a single term carrying two readings that the vocabulary itself distinguishes in the naming of its own series. The distinction drawn here is a distinction the paper introduces. Section 21 turns to a system in which the tradition itself develops the phase reading at length, and in which the placement of the figures within the calendrical year bears on the proposition just stated.

21 The Twelve Sovereign Hexagrams and the Space of Polarity Configurations

The system in which the polarity vocabulary is developed furthest is treated here, and it supplies the paper's one worked formal exhibit. Its objective is to show that the tradition possessed a construction in which polarity configurations succeed one another under a rule while the entities remain fixed, and that the space of those configurations is placed in correspondence with the finest divisions of the calendrical year. The section reports the series and its calendrical assignment, states the correspondence, reports the arithmetic in which changeability is encoded, and sets out one reading of the paper's own, marked as such. The method is report of an established system followed by a single interpretive claim.

21.1 The Series and Its Assignment

The twelve figures known as the *waning-and-waxing hexagrams*, or as the bi gua (sovereign hexagrams, 辟卦), are the six in which yang lines accumulate from below and the six in which yin lines do the same. The first group runs fu (Return, 復), lin (Approach, 臨), tai (Peace, 泰), dazhuang (Great Strength, 大壯), guai (Resolution, 夬) and qian (the all-yang figure, 乾). The second runs gou (Encounter, 姤), dun (Retreat, 遯), pi (Obstruction, 否), guan (Contemplation, 觀), bo (Stripping, 剝) and kun (the all-yin figure, 坤). Each figure is assigned to a month and to one of the twenty-four solar terms, within the wider system of hexagram-and-vapour correlations associated with Meng Xi and Jing Fang [43].

Two features of the assignment bear on Section 20. The all-yang figure is assigned to the month whose central term is xiaoman (Lesser Fullness, 小滿), and the summer solstice is assigned to *Encounter*, the first figure carrying a yin line. The winter solstice is assigned to *Return*, the first figure carrying a yang line. Extremum and reversal are therefore placed at the same point.

21.2 The Correspondence

Claim 21.1. (Correspondence of the configuration space). The twelve figures carry seventy-two lines in total, and these are set in correspondence with the seventy-two hou

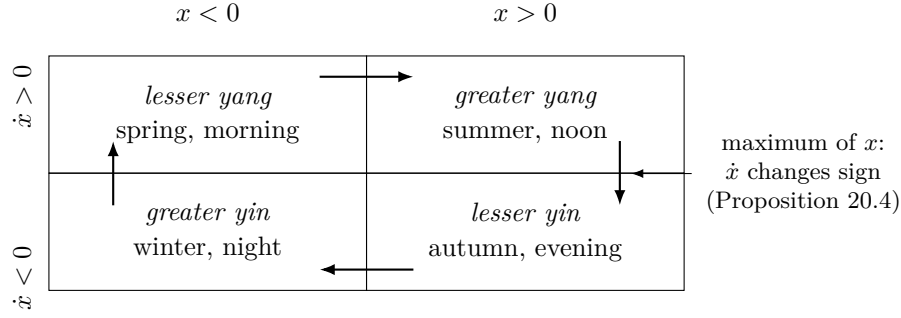


Figure 3: The four images set against the sign of a bounded quantity and the sign of its rate of change, with the received seasonal and diurnal correlations. The correspondence is the paper’s reading and is stated as such in Section 21.4. A bounded quantity traverses the four combinations in the order shown and returns, which accounts for the number of the images and for their cyclic order; and at the maximum of the quantity the rate of change reverses, which is the content of Proposition 20.4.

(pentads, 候), the finest standard division of the calendrical year; so the space of polarity configurations in this system stands in correspondence with the finest cells of the year [43].

The correspondence is the system’s own and is reported here. What the paper takes from it is a single consequence. A polarity assignment made within this system is indexed to a position in the year, and a statement of the form *yang predominates* carries an index in the same way that Section 18 showed a polarity predicate to carry a relatum. The index is a period, and the system supplies it at the finest grain the calendar affords.

The correspondence connects Part IV to the argument of Section 18 in a way worth stating plainly. The recovery rule discussed there is a doctrinal instruction. The correspondence reported here is an institutional arrangement that performs the same office by other means, since a vocabulary bound to calendrical positions is a vocabulary in which the question *stated when* has a determinate answer.

21.3 The Encoding of Changeability

Claim 21.2. (Changeability in the arithmetic). In the divinatory procedure associated with the dayan (Great Expansion, 大衍) numbers, the values nine and six are the changing values and the values seven and eight are the unchanging ones, so that a line at an extreme of its kind is marked as passing into its opposite while a line short of that extreme is marked as remaining [43].

The claim reports the procedure. Its interest for the argument is that the passage of an extreme into its opposite is encoded in the arithmetic of a technique, in place of being asserted only in a philosophical formulation. A practitioner performing the procedure enacts the doctrine of Section 20 whether or not the doctrine is before the mind, which is a form of transmission that a study of doctrinal statements alone would miss.

21.4 The Paper’s Reading of the Four Images

The following is the paper’s reading, offered as a reading and marked as such wherever it is used later.

The four images of the classical formulation, namely taiyang (greater yang, 太陽), shaoyang (lesser yang, 少陽), shaoyin (lesser yin, 少陰) and taiyin (greater yin, 太陰), correspond in the received correlations to summer, spring, autumn and winter respectively. Under the two readings of Section 20, a quantity admits of four sign combinations: above its reference and

increasing, below and increasing, above and decreasing, below and decreasing. The seasonal correlation places the four images in exactly those four positions of the annual solar cycle.

Figure 3 sets out the correspondence. Two things follow if the reading is admitted. The number of the images is accounted for, since two binary distinctions yield four and no more. And their cyclic order is accounted for, since a bounded quantity traverses those four combinations in one direction and returns.

Three restrictions are placed on the reading, and they are restrictions the paper imposes on itself. The seasonal correlation is the tradition's and the correspondence with sign combinations is the paper's. The reading is offered as an account of why the scheme has the shape it has, and it carries no claim that any practitioner understood the images in these terms. And the reading stops at four; the paper attempts no extension of it to the eight trigrams, since the further distinctions there admit of readings the paper has no means to choose among. Part IV has treated the suppression of a relatum from the side on which it produces an essence. Section 22 treats it from the side on which it succeeds, and states the condition under which the success holds.

22 The Separability Idealization and the Conditions of Its Use

Part IV closes here with the operation examined in Section 19, taken from the side on which that operation succeeds. Its objective is to state the conditions under which the suppression of a relatum is a sound working procedure, and to locate the point at which those conditions fail. The section concedes the idealization to the literatures that own it, states the condition of its validity, states where the condition fails and what that has to do with the doctrine of Section 20, and declines an inference the material invites. The method is concession followed by the statement of a condition.

22.1 The Idealization and Its Owners

The operation of treating a relationally conditioned quantity as a property of a single entity, by holding the relational background fixed and dropping it from the statement, is a standard and successful procedure, and its description is owned.

Howard's study of Einstein distinguishes a separability principle, on which spatially separated systems possess their own separate states, from a locality principle concerning the propagation of effects, and shows the two to be independent [31]. Cartwright's account of the laws of physics turns on the conditions under which a law stated for an idealized case may be applied [10]. Carnap holds that the adoption of a framework of entities is a practical question, to be settled by what the framework makes tractable [9], and Quine's account of ontological commitment addresses the same point from another side [47]. Hacking treats representation and intervention as related activities [22], and Wimsatt treats idealizations as tools with characteristic biases [59].

The paper concedes all of this and claims no part of it. What it adds is a condition stated in the vocabulary of Part IV, so that the successful case and the failing case may be described together.

22.2 The Condition of Validity

Claim 22.1. (The condition of harmless fixing). Fixing a relational background and dropping it from the statement is a sound procedure over an interval during which the

background changes slowly by comparison with the process under study; and the procedure is sound exactly to the degree that this separation of rates holds.

The claim is a restatement of ordinary practice in the vocabulary of Section 18, and it is offered as a restatement. Its use here is that it converts a methodological maxim into a condition with a determinate failure case, which the next subsection states.

22.3 Where the Condition Fails

Claim 22.2. (The failure at a turning point). Where the quantity fixed is near a turning point, the separation of rates fails, since the background quantity's direction of change is itself changing on the timescale of the process; and a term whose relatum has been fixed is least reliable there.

The connection to Section 20 is direct and is the reason this section stands in Part IV. Under the phase reading, the point at which yin arises within yang is the point at which the quantity's direction of change reverses. At precisely that point the fixing described in Claim 22.1 is least defensible, since the quantity held constant is on the move.

A reading of the doctrine follows, and the paper offers the reading as a reading. A doctrine directing attention to the passage of an extreme into its opposite directs attention to the point at which treating a polarity term as a standing property of a thing is least reliable. Section 26 returns to the specialists the question of whether the doctrinal literature can be read as functioning in that way, and the paper rests no claim on an affirmative answer.

22.4 An Inference Declined

The material of this section invites an inference that the paper declines here, at the point of temptation, in place of declining it only in the closing section.

The inference runs from the observation that entity-and-property description is a powerful working procedure to the conclusion that a tradition adopting it developed a science, and that a tradition distributing ontological work otherwise did not. That inference is a version of a long-debated question in the history of science. Sivin argued that the question rests on identifiable assumptions and fallacies, and that the heuristic has exhausted its usefulness [50]; Elman's history of science in China is written on premises incompatible with the inference's form [14].

The paper declines the inference and takes no position on the question behind it. Section 27 records the exclusion together with the counter-cases that tell against the inference's factual premise. Nothing in Part IV supports a conclusion about the scientific or technical trajectory of any tradition, and Part V holds to that. Part IV closes here. Its instruments are the recovery rule, the two readings of a polarity term, and the condition on fixing a relational background. Part V returns to the two questions with which the paper opened, taking them

in the order in which they were asked and answering each by the route Part I established.

Part V

The Two Questions Answered

23 The Level at Which the Sun's Sex Is Fixed

The first of the two questions the paper set itself is answered here. Its objective is to show that the question as ordinarily posed has no single answer, to identify what does admit of an answer once the levels are separated, and to state the general form of the objection that disposes of a family of proposed explanations. The section restates the question, sets out the configurations the six cases exhibit, states the finding, states the objection in its general form, and records what survives of the original question. The method is the application of the criterion of Section 5 to the material of Parts II and III.

23.1 The Question Restated

The question this paper began from was why the sun deity is female in some traditions and the noun for the sun feminine in some languages. As ordinarily posed the question asks after a single property of a tradition, and it presupposes that a tradition has a sex for the sun in the way that it has a word for the sun.

The presupposition is what the material of Parts II and III bears on. A tradition has a word for the sun because a language has one noun for each thing it habitually names, and the noun's gender, where the language has genders, is a single fact about a single form. A tradition's sex for the sun has no such guarantee of singularity, because the assignment may be carried at several of the levels of Section 4, by different parties, on different evidence, and with different values.

Two consequences of that difference are drawn in this section. Section 23.3 states what becomes of the question, and Section 23.4 states what becomes of a whole family of answers to it.

23.2 The Configurations Exhibited

The six cases exhibit five configurations, and the range is what the answer turns on.

The lexical and personification levels may agree, as in the Germanic case and in the Ugaritic material. They may oppose one another within a single family, as in the Semitic case, where the noun is feminine across the family and the Akkadian deity is male. The lexical level may be absent while the personification level carries a strong assignment, as in the Japanese case. The lexical level may be absent while the cosmological level carries a strong assignment and the personification level stays thin, as in the Chinese case. And two personification assignments of opposite sex may be held at once within a single state pantheon, as in the Anatolian case.

23.3 The Finding

Claim 23.1. (Indeterminacy of the question). A question of the form “what sex is the sun in this tradition” has a determinate answer only where the tradition carries an assignment at one level and where the questioner has specified that level. Where assignments are carried

at several levels with different values, or at two positions within one level, an answer to the unqualified question reports the level or the position that the answerer selected.

The claim is a consequence of Claim 5.1 applied to the material, and its force is that the selection is ordinarily invisible. A philologist reports the noun. A historian of religion reports the deity. A student of cosmology reports the polarity. Each answer is correct at its level, and a comparison assembled from any two of them yields a difference between disciplines.

23.4 The General Form of the Objection to a Family of Explanations

Claim 23.2. (Invariants and variables). An explanation of a female solar assignment by a property that the sun possesses in every tradition, or by a feature of human cognition held to be general, explains a variable outcome by an invariant, and supports no conclusion about why one tradition assigns as it does and another otherwise.

Three explanations of this form recur, and Section 27 records their exclusion.

The first derives the assignment from the sun's role in nourishing crops. Solar nourishment of crops is found in traditions on both sides of the assignment.

The second derives it from climate, holding that a temperate sun is experienced as gentle and becomes female while a harsh sun becomes male. The Semitic case of Section 8 contradicts the account directly, since the family standing as the type of solar harshness carries a feminine noun for the sun throughout, and a solar goddess in its Levantine branch.

The third derives it from a survival of an earlier social order in which women held religious authority. The reconstructive scheme behind this account has been abandoned in the discipline that produced it, and the paper declines it on that ground and on the ground of Claim 23.2.

Claim 16.1 is the same objection made against the accounts of the cognitive science of religion, and the parallel is worth marking. Neither the sun's properties nor the mind's general operations vary with the outcome, so the explanation must be sought in what does vary.

23.5 The Residue of the Question and Its Answerable Forms

Two questions survive the finding, and they are answerable.

The first asks, of a specified level, why a particular tradition carries the assignment it does. Where specialists have answered such a question for the cases treated here, the answers have been historical: contact between language communities in the Akkadian case, and a datable formation under identifiable political conditions in the Japanese case if the position of Section 13 is right. Both answers concern events, and both are open to the ordinary methods of the disciplines that produced them.

The second asks why the levels stand as they do in a given tradition, which is a question about the tradition's institutions of language and cult, and is likewise historical.

What has been removed is the third question, which asked what it is about the sun, or about the people who see it, that makes it female here and male there. Claim 23.2 is that this question has no answerable form, since its subject varies while its proposed explanantia do not. Black's study of the gendered aspect of correlative classification treats the questions that remain [6]. The first question is answered. Section 24 takes the second, and does so in the conservative form declared in Section 3.7, since the readings it offers enter material that specialists dispute.

24 Rank, Jurisdiction, Descent, and the Degree of Personification

The second of the two questions is answered here, in the third and last of the places where the form declared in Section 3.7 is applied. Its objective is to offer readings of the configuration established in Section 14, in which a body carries heavy ritual address and slight narrative individuation, and to state for each what would tell against it. The section restates the explanandum, offers a reading turning on the separability of rank from jurisdiction, offers a second turning on the structure of an apex, presents the positions on a third turning on the structure of a legitimacy claim, records the rivals, and declines an inference from cross-cultural databank correlations. The method is the presentation of readings with their falsifiers, and no reading in this section is offered as established.

24.1 The Explanandum Restated

Three results of Part III fix the question this section answers.

Section 14 established that the Chinese sun carried heavy ritual address and slight narrative individuation over the same long period, so that the configuration to be explained is a combination and no single scale of religious importance will state it. Section 14.6 separated that question from the question of why no dense popular cult of the sun developed, and identified the first as the question the paper inherited. Section 16 established that accounts appealing to properties of the phenomenon leave the variation unexplained, since the sun's regularity, ubiquity and coupling to the seasons are the same wherever the sun rises while the treatment of the sun is not.

What is wanted, then, is a feature of the arrangement into which a celestial body is placed that varies as the outcome varies. Three candidates are offered below. Each concerns the arrangement and not the body, each is stated with what would tell against it, and none is offered as established.

24.2 The Separability of Rank from Jurisdiction

The first reading turns on a fact recorded in Section 15: the office encoding did absorb the sun. Solar figures bearing the designations of that system are attested, at the rank of *imperial lord* in the solar palace and as Taiyang Xingjun (the Stellar Lord of the Sun, 太陽星君). Exclusion from the system is therefore unavailable as an explanation, and the question becomes what distinguishes these figures from others within it.

Definition 11.3 and Definition 11.4 supply the distinction. The figures of the Dipper carry a jurisdiction over lifespan and misfortune. The figures of the thunder department carry a jurisdiction over the punishment of wrongdoing and over rainfall. Each of these is a class of matter about which a practitioner may have a need and may therefore approach. The solar figure carries a rank at the summit of the scale and a portfolio empty of any such class.

Reading 24.1. (Cult intensity and jurisdiction). Within an office-form pantheon, the density of observance directed at a figure follows the extent of its jurisdiction and stands apart from its rank, so that a figure of the highest rank with a slight portfolio may receive slight observance.

The reading is offered for testing. Reading 24.1 would be told against by a figure of high rank and slight portfolio carrying dense observance, or by a figure of low rank and heavy portfolio carrying little. The test is available: the canonical collections record titles and jurisdictions, and the distribution of temples and of observance is a subject with its own literature. The paper has conducted no such test and offers the reading on the strength of the

cases named here alone.

24.3 The Structure of an Apex

The second reading turns on a structural feature of the bodies themselves, and it applies only to a pantheon organized by rank.

An ordering of offices requires a summit, and the summit is the position least suited to a body that moves and that stands in a pair. The sun is one of two luminaries and traverses the sky daily. The celestial pole is unpaired and does not move, and the classical formulation in the *Lunyu* (Analects, 論語), in the chapter Weizheng (On Governing, 為政), likens governing by virtue to the north star, which keeps its place while the other stars turn toward it.

Reading 24.2. (Structural fitness for an apex). Where a pantheon is ordered by rank, a body that is unpaired and fixed affords the position of the summit more readily than a body that is paired and in motion; and the assignment of the summit to the pole in the Chinese material is consistent with that affordance.

Three restrictions apply, and the third is the most important. The reading concerns what a structure affords, and it attributes no motive to any person and no design to any period. It concerns the summit alone and leaves the rest of an ordering untouched. And its evidential value is limited by the number of pantheons available for comparison, which is why Section 26 returns it in place of resting weight on it.

A connection to Part IV is worth stating. Under the phase reading of Section 20, the sun is the body whose motion generates the annual cycle, and the pole is the body invariant under it. A structure seeking a fixed reference locates it where the variation is absent, which is a restatement of the affordance in the vocabulary of that section.

24.4 Descent and Mandate, with the Positions Stated

The third reading concerns the relation between the structure of a legitimacy claim and the degree to which a body is individuated, and it is presented in the conservative form because the material is contested.

The consideration in its favour. A claim of descent from a body requires that the body be a person, since descent is a relation among persons. Where a ruling house grounds its authority in descent from the sun, the sun must carry a name, a sex, kin and a history, which is individuation in the sense of Definition 11.2. The Japanese case is of this form, and the Egyptian and Andean solar monarchies are commonly described in these terms. Where authority is grounded in a warrant that may be withdrawn upon performance, no personal ancestor is required at the celestial end, and the Chinese case is of this form, with descent running to the ancestors and the warrant to heaven.

The considerations against. The sample is small, and the cases were selected for other reasons. If the position of Section 13 is correct, the Japanese case may be explained by the political circumstances of a particular compilation, which would account for the instance without supporting a general covariation. And a rival account is available that appeals to a different feature of the arrangement: in the earliest Chinese material the positions of highest agency were already occupied by the high god and by the royal ancestors, so that the slight individuation of the sun may be a consequence of competition for a limited number of such positions.

The paper's preliminary reading. The paper's reading, offered as preliminary, is that descent and individuation covary, and that the mechanism runs through what a descent claim

requires of its terminus. The reading would be told against by a polity grounding authority in solar descent whose sun remained thinly individuated, or by a polity grounding authority in a performance-conditional warrant that individuated the sun heavily. Both are findable in principle, and Section 26 asks for them.

A companion study by the author treats the difference between a warrant whose terms are supplied from within the order it warrants and a warrant answerable to something outside that order. The present reading and that distinction bear on one another, and the connection is offered there as a prediction returned to specialists.

24.5 An Inference from Databank Correlations Declined

A literature exists that tests propositions relating social structure to the character of gods by coding many societies and correlating the codes. Its ancestor is Swanson's study, which related the presence of high gods to the number of sovereign groups in a society [51]; Peregrine's partial replication found substantial problems in the sample and the method while supporting the high-god hypothesis in part [44]. The recent form of the literature has had a difficult passage. A prominent study relating moralizing gods to social complexity was retracted by its authors after a re-analysis showed that the treatment of missing data had determined the direction of the reported finding [4], and the authors' subsequent restatement has been contested.

The paper draws no inference from correlations of this kind, and the reason is specific to its own subject. The variables at issue here are the level at which an assignment is encoded and the extent of a jurisdiction, and both require a reading of the sources of a tradition to code at all. A coding scheme that fixes them from summary descriptions would import exactly the level confusion that Section 5 exists to prevent. The readings of this section are therefore offered as readings of cases, with their falsifiers named, and the general question is returned in Section 26 to the discipline that owns it. Both questions have now been answered. Section 25 closes Part V by establishing that the error the paper describes runs in both directions, which the test set in Section 3.3 requires of it.

25 The Symmetry of the Comparative Error

Part V closes here with the establishment that the error the paper describes runs in both directions. Its objective is to discharge the test set in Section 3.3, on which a criterion correcting the error in one direction alone would be a criterion addressed to one tradition. The section states the two directions of the error with their worked instances, states the finding, and records what the symmetry costs the paper. The method is the exhibition of matched pairs.

25.1 The Directions in Which the Error Runs

Taking the lexical level as the standard of comparison yields the conclusion that Chinese has no sexed sun. The premise is correct, since Chinese has no gender system. The conclusion concerns the language and is applied to the tradition, which carries a systematic assignment at the cosmological level and a settled one at the level of ritual address.

Taking the cosmological level as the standard yields the conclusion that the Germanic tradition has no polarity structure for the sun and the moon. The premise is correct, since no systematic polarity classification is attested there. The conclusion concerns one level and is applied to the tradition, which carries assignments at the lexical level and at the level of personification.

The same construction may be run with any pair of levels, and the paper's cases furnish others. Taking narrative individuation as the standard yields the conclusion that the Chinese sun was scarcely a religious object, which the record of state observance in Section 14 contradicts. Taking ritual address as the standard yields the conclusion that the Germanic sun was a major cultic figure, which the record does little to support.

25.2 The Finding

Claim 25.1. (Symmetry of the error). The error described in Proposition 5.2 is symmetrical across traditions and across levels, since for any pair of traditions and any pair of levels the construction may be run in either direction, and it yields in each direction a difference that the traditions' assignments at the shared levels leave unsupported.

The claim discharges the test of Section 3.3 in the following way. A criterion that corrected only the conclusion that Chinese has no sexed sun would be a criterion built to defend one tradition against a description produced elsewhere, and it would be doing the work of an advocate. The criterion offered here corrects both conclusions by the same operation, and it corrects them without ordering the traditions, which Section 3.8 requires.

25.3 The Cost of the Symmetry to the Paper's Deliverable

The symmetry has a cost that is worth recording, since it limits what the paper delivers.

A criterion that corrects errors in both directions supplies no comparative result of its own. It tells a reader that a given comparison has yet to be earned, and it says what a matched comparison would require. The matched comparison itself belongs to whoever holds both bodies of evidence, and for most pairs of traditions treated here that is two people in two disciplines.

Section 26 is written on that understanding. The questions returned there are addressed to specialists severally, each in its own idiom, and each is a question that a specialist could answer with material already in hand. Whether they compose into comparative results is a matter for the specialists and for whatever collaboration they choose. Part V closes here. Part VI states what the paper asks of the specialists whose work it has used, and what it concedes about its own limits. Section 26 puts the questions, and Section 27 records the presuppositions, the refutation conditions, the exclusions and the conclusion.

Part VI

Standing, Limits, and Closure

26 Questions Returned to the Specialist Literatures

The test set in Section 3.3, on which the paper asks to be judged by what it generates, is discharged here. Its objective is to put to each literature the paper has drawn on a question that a specialist in that literature could answer with evidence already in hand. The section fixes the form every question takes, puts the questions by literature, and closes with two matters the paper declines to answer and returns whole. The method is address in the specialist's own idiom, with the paper's vocabulary offered as a gloss and never as a premise.

26.1 The Form of the Questions

The questions below are each stated in three parts. The question is stated first in the terms of the literature it is addressed to. The paper's construct is then offered as a gloss, which a specialist may take or leave. And what an answer would do to the paper's claims is stated, so that the question carries a stake.

A scheme generating only questions whose answers it could absorb either way would be generating very little. Several questions below could tell against the paper, and those are marked.

26.2 Assyriology

Is the divergence between the female solar deity of Ugarit and the male solar deity of Akkadian sources sufficiently explained by contact with Sumerian usage, or does the Levantine evidence support an account on which the two developed independently from a common inheritance? A second question bears on the same material from the lexical side: is the feminine gender of the solar noun across the family reconstructible for the proto-language, and if so, does the Akkadian deity's masculinity stand as the sole departure or as one of several?

The paper's gloss: a divergence between the lexical level and the personification level within one family, with a proposed explanation that is historical and datable. What turns on it: Claim 8.1's second half holds that where specialists explain such a divergence, the explanation offered is historical and appeals to no property of the sun or of its observers. An account appealing to something other than contact and formation would qualify that half of the claim, though the first half, which concerns the separability of the two levels, would stand.

26.3 Hittitology

Were the solar goddess of Arinna and the solar god of heaven understood by any period's practitioners as aspects of one deity, or as distinct deities throughout? Does the evidence permit a periodization, on which the two were distinguished at some stages and assimilated at others? And is there a body of ritual material in which the two receive separate address, which would settle the matter at the level of practice where the theological question may be underdetermined?

The paper's gloss: two assignments at one level, or one assignment differently described.

What turns on it: Claim 9.1 holds that a question about the sun's sex has no determinate subject in this tradition, and evidence that the two figures were consistently understood as one deity would weaken the case considerably. Anatolia carries more weight in Part II than any other case, and its sourcing is among the paper's most indirect, so this is the question whose answer would most change the paper's standing.

26.4 Indo-European Studies

Are there further branches in which the abstract noun for the sun and the theonym diverge in form or in gender, as Matasović reconstructs for the parent language, and does the divergence correlate with anything in the mythological treatment of the figure in those branches? A related question: in branches where the theonym coincides with the ordinary noun, is the coincidence inherited or is it the result of a later collapse of two forms into one?

The paper's gloss: the theonym test of Claim 12.1 is a test on the formation of a name, and the reconstruction reports that the parent language held apart, at the level of the lexicon, the

two formations the test distinguishes. What turns on it: Claim 12.1 is stated for the six cases and would gain or lose in generality according to the distribution across the family. A finding that the two formations collapse and separate freely, with no correlate in the treatment of the figure, would leave the test a lexical curiosity.

26.5 The Psychology of Language

Do the stimulus sets used in studies of grammatical gender and conception mix items whose gender is carried by agreement alone with items that carry an established personification in the participants' culture? Where the paradigms use celestial and natural objects, are the items whose results drive the effect the ones with a personification history in the language community tested? And would a stimulus set stratified on that variable produce a cleaner result in either direction than the mixed sets have?

The paper's gloss: a mixture of the first and second encoding levels within one stimulus set, which would make the dependent measure a function of two assignments where the design assumes one. What turns on it: the paper's claims stand whichever answer is returned, since Section 6 takes no position in that literature. The question is offered because the paper declines to enter the debate and would prefer to leave something usable behind, and because a level confusion inside an experimental design would be an instance of the paper's own subject appearing in a place the paper does not otherwise reach.

26.6 Japanese Religious History

Three questions are put here, and the first is the one the specialists are already contesting. Can the sex of the Ise deity at the period of the cult's establishment be settled on the available record? If the feminization is an act of the compilation period, is a motivation recoverable from the compilers' own practice, or does the parallel with the reigning sovereign's succession remain an observation about a resemblance? And is there evidence bearing on how the Amateru cults of the coastal lineages stood to the Yamato centre, which is the point at which Matsumae's account and Teeuwen and Breen's may be distinguished?

The paper's gloss: the date and the agency of an assignment at the personification level, in a tradition where the lexical level is unavailable to carry one. What turns on it: Section 13.4 states that the paper's argument is served by either outcome, so Claim 10.1 is unaffected either way. Section 24.4's preliminary reading is affected: an affirmative answer to the second question would supply a mechanism for the Japanese case within the descent reading, and a negative answer would leave that reading resting on the smaller sample it now has.

26.7 Sinology and the History of Chinese Thought

Two questions are put here.

Can the transmission of the instruction that the polarity terms are said relatively be traced through the corpus, and are there periods or genres in which the nested forms fall out of use while the terms remain? The paper's gloss: the presence or absence of a recovery rule, and the third step of Claim 19.1. What turns on it: Claim 19.2 offers a criterion decidable from the doctrinal literature, and a demonstration that the question cannot be decided from that literature would remove the criterion's usefulness.

How far do the usages that Tadd describes as operating with a substance sense extend across the Han corpus? The paper's gloss: the scope over which the recovery rule holds.

What turns on it: Section 18.6 indexes Claim 18.4 to the usages where the rule holds, and a finding that those usages are the minority would narrow the claim severely.

26.8 Chinese Religion

Does the density of observance directed at a figure in the canonical collections and in the record of temples follow the extent of its jurisdiction, holding rank constant? The paper's gloss: Reading 24.1. What turns on it: the reading stands or falls on this, and the survey remains to be conducted.

A second question is put to the dispute reported in Section 15. Do the bureaucratic model and the personal model make incompatible claims about a single figure at a single time, or do their disagreements concern different aspects of the same figures? The paper's gloss: Section 15.4. What turns on it: the paper's preliminary reading there would be defeated by a demonstration of incompatibility at one level.

26.9 The Study of Yijing Numerology

Two questions are put here. Is the correspondence between the seventy-two lines of the sovereign hexagrams and the seventy-two periods of the year attested as a deliberate construction in the sources that establish the system, or is it a consequence of two divisions arrived at independently and found afterwards to agree? And is the assignment of the solstices to the figures carrying the first line of the incoming kind attested as a considered choice, or does it follow automatically from the way the series is generated?

The paper's gloss: whether the correspondence of Claim 21.1 is a design or a coincidence of counts, and whether the placement Section 20.4 relies on is a datum about the system or an artifact of its construction. What turns on it: Claim 21.1 is stated as a correspondence and requires no deliberateness, so an answer either way leaves it standing; but the use made of the placement in Section 20.4 would be strengthened by evidence that the assignment was considered, and weakened if the placement turns out to be forced.

26.10 The Question Declined and Returned Whole

One question is returned entire, since answering it would require a study the present paper is unable to carry.

Does the encoding of divinity by office covary with the form of the state in which it appears, so that ranked pantheons appear where administrations are large and graded, and assemblies of peers appear where authority is dispersed among aristocracies or cities? The question is Durkheim's in its general form, and Swanson gave it a cross-cultural test whose sample and method Peregrine has criticized [13, 51, 44]. Testing it would need a sample of traditions selected for their political forms, which the six cases here were selected for other reasons and cannot supply. Section 15.6 establishes only the negative point, that office-form heavens are attested across the traditions treated here and beyond them, so that a civilizational reading of the encoding fails.

The paper marks this as its natural successor and leaves its ground to those who hold it.

26.11 The Absences Returned by the Search

Two searches conducted for this paper came back empty, and the absences are recorded here because a reader may take them as leads.

No study coding the sex of solar deities across a systematic cross-cultural sample was found in the standard ethnographic and historical databanks. The finding is a negative result of a search of the reach described in Section 27, and it supplies no ground for concluding that no such study exists.

No sustained application of the framework of niche construction to systems of knowledge was found. The same qualification applies. What remains is to record what the paper presupposes, where it would fail, what it excluded and why, and what it takes itself to have delivered. Section 27 does so and closes the paper.

27 Limits, Exclusions, and Refutation Conditions, with the Conclusion

The paper closes here. Its objective is to record what the argument presupposes without arguing, to state for each load-bearing claim the finding that would tell against it, to list what was excluded and why, to state the reach of the search on which the paper rests, and to say what the paper delivers. The section proceeds through presuppositions, refutation conditions, sourcing, exclusions, priority, scope, and the conclusion. The method is enumeration, and the enumeration is meant to be usable by a reader who wishes to attack the paper efficiently.

27.1 Presuppositions Carried Without Argument

Three presuppositions are carried throughout and carried without argument in the paper.

The first is that the five encoding levels are separately identifiable in the six traditions treated. Parts II and III exhibit cases in which they come apart, which supports the presupposition without establishing it, since the levels interact in ways this paper makes no attempt to describe.

The second is that the specialist literatures are reliable on what the paper concedes. A revision to any conceded finding propagates directly into whatever is built on it here, and the paper's exposure is at its greatest in the Semitic and Anatolian material, where its cases carry the most weight and its sourcing is the most indirect.

The third is that a doctrinal instruction transmitted with a vocabulary is evidence about how that vocabulary was used. Section 18 relies on this and the reliance is worth naming, since the survival of an instruction in a corpus and its observance in practice are distinct matters.

27.2 Refutation Conditions

Table 2 states, for each load-bearing statement, a finding that would tell against it. The table is offered as an instrument for a reader who wishes to test the paper, and its rows are the paper's own account of where it is weakest.

27.3 The Reach of the Search, and the Standing of the Sources

The literatures named in Section 2 were surveyed in English and in Chinese, with assistance from AI systems, over a period of days. A survey of that description is the reach of the search, and the negative results reported in Section 26.11 are negative results of a search of that reach and of no greater one.

Several works are cited here at second hand, through reference literature that reports them. This holds for the Assyriological and Hittitological works of Sections 8 and 9, and for the reference-level verification of the Japanese practice of conferring court ranks on deities

in Section 15.5. In each case the attribution has been verified and the pages have not, and a reader who wishes to rely on any of these statements should consult the work itself. The Semitic and Anatolian cases carry more weight in Part II than any others, so this is the paper's largest exposure.

The statement of Matsumae's that Section 13.3 reports was verified in the article itself, as were the bibliographic particulars of the works cited in Sections 6, 7, 20 and 17.

Two single-source statements are flagged. The correspondence of Claim 21.1 and the divinatory arithmetic of Claim 21.2 rest on one modern reference work. The reading of the Shangqing solar practices rests on one study.

27.4 Statements Excluded

The following were considered and excluded, and the exclusions are listed because the pattern is information about the state of the popular and secondary material on these subjects.

The derivation of a female solar assignment from the sun's role in agriculture, and the derivation of it from climate, are excluded under Claim 23.2. The derivation of it from a survival of an earlier social order in which women held religious authority is excluded on the same ground and because the reconstructive scheme behind it has been abandoned in the discipline that produced it.

The derivation of the Germanic assignment from East Asian polarity cosmology is excluded under Claim 7.1.

The reading on which the Akkadian solar deity was originally female is excluded, since it rests on evidence whose interpretation is contested by the specialist cited in Section 8.5.

An account of a Chinese popular solar observance as a covert commemoration of a fallen dynasty was considered and excluded, since the paper found no specialist study establishing the etiology.

Sources of three kinds were excluded from load-bearing use: works of trade publication in this subject area, essays published in editor-reviewed venues, and a study whose authors have retracted it. The second of these is recorded with a note, since one such essay states part of the scheme this paper assembles, and a reader tracing the scheme's ancestry should know of it.

A reading of the doctrine of reversal as an anticipation of a modern position in the philosophy of science is excluded, and the exclusion is stated because the material invites it.

The inference from a tradition's distribution of ontological work to its scientific or technical trajectory is excluded, as Section 22.4 states. Sivin argued that the question behind that inference rests on identifiable assumptions and fallacies and that the heuristic has exhausted its usefulness, and Elman's history is written on premises incompatible with the inference's form [50, 14]. The inference's factual premise also fails on cases, since metrological unification, the standardized manufacture of mechanical components, systematic classification in *materia medica* and large-scale ceramic production all arose within the correlative milieu the inference assigns to the other side.

Finally, evidence drawn from late imperial fiction was excluded from statements about earlier cosmology, since a source of one period used for the beliefs of another is an instance of the mismatch this paper is about.

27.5 Priority

The paper claims priority for no construct in its general form. The five claims of Section 3.6 are what it offers, and each is a specification, a criterion, or a correspondence built on descriptions that others established. Section 4.7, Section 18.1, Section 19.2 and Section 22.1 name the owners at the points where the constructs are introduced.

One matter of ancestry remains open and is stated openly here. The passage described in Claim 19.1 resembles accounts of reification in the sociology of knowledge closely enough that the paper concedes the description entirely, and it may resemble accounts in literatures the paper has not surveyed. Section 26.8 puts the question to the specialists, and the paper would prefer that question answered against it to leaving it unasked.

27.6 Scope

Four limits of scope are recorded, and each is a limit the paper accepted deliberately.

The paper treats the sun and the moon. The scheme of Section 4 is stated for celestial bodies generally, and it awaits testing on other objects; whether the five levels remain distinguishable for bodies with fewer regularities, such as planets or comets, is a question the paper has not examined.

The paper treats six traditions, selected by the principle of Section 5.3 for what each separates. The selection makes the set unsuitable for any claim about distributions, since a set assembled for dissociations will over-represent them, and Section 24.5 relies on that point when declining inference from coded samples.

The paper treats two registers, language and religion. The political dimension of the office encoding is visible throughout Section 15 and is returned in Section 26.10 in place of being developed, because testing it would require a set of traditions selected for their political forms, which this one is not.

And the paper establishes conditions on comparison in place of comparative results, a cost stated in Section 25.3 and a consequence of the symmetry established in Claim 25.1.

27.7 Conclusion

The paper set out from two questions and has answered both by the same route.

The question why the sun is female in some traditions has no single answer, because the sex may be fixed lexically, by personification, at neither, at both with divergent values, or at both with two assignments held at once, and because an unqualified answer reports the level the answerer selected. What survives are historical questions about particular assignments, and where specialists have answered them, the answers concern contact and formation.

The question why the sun failed to become a dominant personified figure in traditions that sacralized it heavily has been separated from the question of popular cult density, and three readings have been offered for the residue, each with the finding that would tell against it.

The instrument that produced both answers is a scheme of five encoding levels and a criterion governing which reports may be compared, and its cost is stated in Section 25.3: it supplies no comparative result of its own. What it supplies is a vocabulary in which the sex of the sun and the personhood of the sun can be asked about across traditions without the asking having already settled which tradition was the richer.

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Table 2: Load-bearing statements and the findings that would tell against them.

Statement	A finding that would tell against it
Hypothesis 4.6	A tradition in which an assignment at one level is shown to fix the assignment at another, so that the levels are dependent in the cases treated.
Claim 5.1	A comparative result about two traditions, drawn from reports at different levels, that specialists in both traditions accept as sound.
Claim 7.1	A demonstration that the Germanic and Baltic assignments derive from a source outside the family, on grounds that also account for the Italic assignment.
Claim 8.1	Evidence that the Akkadian and Ugaritic assignments do not diverge, or that their divergence is explained by something other than contact and formation.
Claim 9.1	Evidence that the Hittite solar deities were consistently understood as one deity differently described.
Claim 12.1	Traditions in which theonym formation and the mode of personification vary independently across a substantial sample.
Claim 14.1	Evidence that the Chinese sun was individuated more heavily than the paper reports, in the periods for which heavy address is attested.
Claim 16.1	An account appealing to properties of a phenomenon that nonetheless predicts the variation across traditions in that phenomenon's treatment.
Claim 18.4	Evidence that the instruction to read the polarity terms relatively is absent from the corpus, or that comparable instructions accompany the European substance vocabulary.
Claim 19.2	A demonstration that the presence of a recovery rule cannot be decided from a tradition's doctrinal literature.
Proposition 20.4	Evidence that the doctrine of reversal was asserted for quantities that are unbounded, or in senses to which the phase reading is inapplicable.
Claim 21.1	Evidence that the two divisions of the year were fixed independently and that the correspondence of counts is incidental.
Reading 24.1	A figure of high rank and slight jurisdiction carrying dense observance, or a figure of low rank and heavy jurisdiction carrying little.
Reading 24.2	A ranked pantheon whose summit is a paired or a moving body.
Section 24.4	A polity grounding authority in solar descent whose sun remained thinly individuated, or a polity grounding authority in a performance-conditional warrant that individuated the sun heavily.