

Rethinking the Emergence of Relational Trust

Lacanian Psychoanalysis, Dynamical Systems, and Epistemic Limits

Wanhong HUANG

huangwanhong@serendip.ngo

Abstract

Relational trust is frequently inferred from cooperation, disclosure, reported confidence, or repeated successful interaction. Each indicator can also arise through sanction, habit, dependence, strategic calculation, attachment, or transference. This paper develops a conditional account of the emergence of relational trust while preserving that underdetermination. It first represents trust as a directional, domain-indexed profile comprising expectation, exposed stake, trustee discretion, participant-directed normative address, and history-bearing response. It then uses Lacanian accounts of transference, the subject supposed to know, and the incomplete symbolic guarantee to clarify how an addressee may acquire a privileged place in a relation. These concepts constrain interpretation; they remain distinct from measured psychological variables. An adaptive state-space model represents typed events, relational memory, symbolic position, observable conduct, and institutional context. Exact model-relative results show that identical cooperation traces can support divergent latent interpretations, that equal present observations can conceal consequentially different histories, and that additional probes refine identification sets only relative to a declared model class. The resulting empirical programme emphasizes longitudinal, low-risk, and ethically admissible contrasts involving discretion, ordinary fulfillment, naturally occurring rupture, and repair. A separate normative profile evaluates trustworthiness, warranted placement, benefit, power, justice, repair, and exit. The framework is a revisable synthesis. Its central contribution is an architecture for studying how trust may emerge while preserving distinctions among behavioral regularity, epistemic certainty, and normative approval.

Keywords: relational trust; Lacanian psychoanalysis; transference; relational dynamics; epistemic limits

Discussion Paper Note

This paper is a preliminary discussion paper intended to share an evolving idea and invite further dialogue, criticism, revision, and independent development.

The author claims responsibility for the definitions, formal constructions, taxonomy, argument, selection of material, and conclusions presented here, including any errors that remain. Intellectual precedents are acknowledged through verified references. Attribution records a relation to earlier work; responsibility for this manuscript's formulations remains with the author.

The arguments should be understood as provisional and historically situated. Readers are encouraged to question, revise, extend, reinterpret, or independently develop the ideas presented here. Where appropriate, acknowledgment of this paper as one point of encounter in the development of related ideas is appreciated. Such acknowledgment records intellectual encounter while preserving the independence of later inquiry.

Responsible Use and Rights Reservation

The author encourages good-faith discussion, criticism, independent development, and responsible use of the knowledge presented in this work. The author retains responsibility for the present manuscript and welcomes independent evaluation of its claims.

All rights and remedies available under applicable law are reserved with respect to unlawful conduct, harmful or abusive exploitation, improper commercial appropriation, infringement of intellectual property or other legal rights, and conduct contrary to applicable national, regional, or international law.

This reservation preserves the ability to respond to misuse and harmful appropriation. Legitimate academic inquiry, criticism, independent reasoning, and further development remain encouraged.

Notices

Status. This is a working draft circulated for discussion. It presents a preliminary and revisable position. Section and statement numbers may change during revision.

Licence. This work is made available under a Creative Commons Attribution–NonCommercial 4.0 International Licence (CC BY-NC 4.0), subject to the rights reservation stated on the preceding page.

Statement on the use of language models. Drafting, literature search, formal criticism, and editorial checking were conducted in dialogue with ChatGPT (OpenAI). The author assumes responsibility for the claims, structure, selection of material, formal constructions, and position taken. References used in the manuscript were checked against publisher, journal, university, or authoritative reference pages listed in the project literature ledger.

Relation to companion work. This paper follows the manuscript *The Spacetime of Desire*, which develops an emergent relational geometry of desire through spin-foam and group-field-theoretic formalisms. The present paper has a narrower object and a different mathematical task. It studies the formation and attribution of interpersonal trust through adaptive dynamics and probe-relative identification. The two papers share an interest in relational emergence while preserving independent definitions and evidential obligations.

Suggested citation. Huang, W. *Rethinking the Emergence of Relational Trust: Lacanian Psychoanalysis, Dynamical Systems, and Epistemic Limits*. Working draft, 2026.

1 Introduction

This section establishes the paper’s target, its interdisciplinary method, and the limits of its claims. The discussion proceeds from an attribution problem to a process question, then states the contribution and maps the argument.

Trust matters partly because action often proceeds before decisive assurance is available. A person accepts testimony, discloses something vulnerable, delegates a task, receives care, or permits another person’s discretion. Later events may reorganize the meaning of the earlier act. Fulfillment can become a shared precedent; a rupture can disclose an unnoticed asymmetry; repair can alter the relation and yield a new form. A theory of relational trust therefore needs both a conceptual account of the relevant relation and a temporal account of how it acquires efficacy.

Observable regularity supplies only part of that account. Cooperation may be secured by surveillance, contract, dependency, routine, fear, or calculated advantage. Disclosure may express trust, desperation, institutional requirement, or a transferential address to someone invested with supposed knowledge. Philosophical work on trust consequently disputes the factor that distinguishes trust from reliance. Prominent proposals emphasize accepted vulnerability, goodwill, affective expectation, commitment, motives, or participant-reactive attitudes (Baier, 1986; Jones, 1996; Holton, 1994; Hawley, 2014; McLeod, 2023). The disagreement is substantive. A formal model that silently selects one proposal would settle a philosophical dispute through notation.

The present paper adopts a profile strategy. A candidate relation is represented through several typed dimensions whose aggregation remains open. This strategy allows rival theories to specify different bridge conditions while sharing a common event and evidence architecture. It also distinguishes three questions: whether a history-bearing relation has emerged, whether that relation deserves the name trust, and whether its placement is warranted or just.

Lacanian psychoanalysis enters at a specific juncture. In transference, an addressee can occupy a privileged symbolic position, including the position of the subject supposed to know. This structure can organize speech, expectation, dependence, and interpretation (Lacan, 1998, 2015; Fink, 2015; Johnston, 2026). It can accompany trust, accelerate its appearance, or produce an appearance of guarantee. The Lacanian contribution therefore concerns the structure of address and supposition. It supplies a constraint against treating the other’s apparent knowledge as a complete foundation for the relation.

Dynamical systems supply the temporal scaffold. Relational history is encoded as a state updated by typed events, and that state can modify later action. Systems with memory and hysteresis offer mathematical resources for path-dependent response (Krasnosel’ski and Pokrovski, 1989; Hale and Koçak, 1991). System identification and latent-variable theory then clarify a second limit: different mechanisms can generate the same observed trajectory (Ljung, 1999; Sontag, 1998; Bollen, 2002). Formal language is used here to locate inferential obligations while withholding precision from an unvalidated construct.

Claim 1.1 (Conditional emergence account). *A relational trust attribution gains process-level support when a typed history of exposure and response produces a persistent relational state that changes later conduct, and when the trust interpretation survives comparison with coercive, strategic, habit-*

Table 1: Literature roles and translation limits

Literature layer	Contribution to the framework	Authority limit
Philosophy of trust	Conceptual distinctions among trust, reliance, vulnerability, goodwill, affect, and commitment	Leaves several rival accounts open; conceptual analysis alone supplies limited process evidence
Social and organizational research	Risk, interdependence, process, repair, and institutional context	Operational measures require conceptual typing and population-specific validation
Lacanian psychoanalysis	Transference, address, supposed knowledge, and symbolic nonclosure	Clinical and metapsychological concepts require an explicit bridge before empirical or dynamical use
Developmental and clinical research	Attachment stability, mentalizing, and epistemic trust	Constructs remain distinct from the present interpersonal trust profile
Dynamical systems	Memory, feedback, multistability, and path dependence	A state variable receives meaning from a separate measurement and interpretation model
Identification theory	Equivalence classes, observability, and model-relative inference	Identifiability establishes recoverability within a model class; construct validity remains an independent obligation

ual, attachment-based, and transference rivalries. Such support remains conditional on the declared construct, model class, probe family, population, and institutional context.

The paper makes five contributions. First, it proposes a directional and domain-indexed trust profile. Second, it reconstructs Lacanian supposition as a typed interpretive layer with explicit translation limits. Third, it states a conditional philosophical argument for process-level relational emergence. Fourth, it develops an adaptive model with exact, modest results about history dependence and identification. Fifth, it separates emergence from trustworthiness, warranted placement, benefit, justice, and repair.

Section 2 organizes the literature and assigns each tradition a limited role. Sections 3 and 4 develop the conceptual and Lacanian architectures. Section 5 states the philosophical argument. Sections 6 through 8 provide the dynamical model, epistemic limits, and analysis of rupture and repair. Sections 9 and 10 state an empirical programme and a normative audit. Sections 11 and 12 examine objections and research obligations. Section 13 concludes with the paper’s revisable position.

2 Literature Corpus and Comparative Method

This section establishes the evidential division of labor among the literatures used in the paper. It reviews six bodies of work, then specifies the comparative method by which concepts travel across them. Table 1 records the resulting authority limits.

2.1 Philosophical Models of Trust

This subsection identifies the conceptual dimensions that motivate the profile representation. It compares influential accounts through their distinguishing factor and preserves disagreement as a design constraint.

Baier’s analysis makes accepted vulnerability and goodwill central to the moral phenomenology of trust (Baier, 1986). Jones develops an affective attitude account in which optimism about another’s goodwill is partly constitutive (Jones, 1996). Holton connects trust with a participant stance and the reactive attitudes surrounding betrayal (Holton, 1994). Hawley places accepted commitment at the center of trust and distrust (Hawley, 2014). Hardin analyzes encapsulated interest, while Pettit considers the possibility that trust can motivate trustworthiness (Hardin, 2002; Pettit, 1995). Faulkner develops a contemporary comparison of predictive and affective trust through commitment-indexed expectation (Faulkner, 2025). The Stanford Encyclopedia survey documents the continuing plurality of will-based, motive-based, affective, and predictive accounts (McLeod, 2023).

These theories overlap around a structure of dependence under uncertainty, yet they type its normative significance differently. The present framework treats expectation, exposure, discretion, normative address, and relational response as separate coordinates. A specific philosophical theory may then require a particular combination. The formalism consequently hosts conceptual disagreement and leaves each combination subject to an articulated trust interpretation.

2.2 Reliance and the Trust-Specific Factor

This subsection reconstructs the principal philosophical dispute that motivates the paper. It compares predictive, motive-based, affective, commitment-based, and participant-stance accounts through the work each asks trust to perform.

The familiar three-place expression, “*A* trusts *B* to do *X*,” already contains more structure than a global trait score. It fixes a direction, an object, and a practical dependence. Yet the same expression remains compatible with several theories of the attitude involved. A predictive interpretation emphasizes *A*’s expectation that *B* will do *X*. A motive-based account asks which motive *A* expects to move *B*. An affective account emphasizes an optimistic orientation toward goodwill. A commitment account asks whether *A* expects *B* to recognize and uphold an accepted commitment. A participant-stance account attends to the quality of the relation and to responses such as betrayal, resentment, gratitude, and assurance (Baier, 1986; Jones, 1996; Holton, 1994; Hawley, 2014; McLeod, 2023).

The disagreement concerns the trust-specific factor added to practical reliance. Prediction alone can guide action around a dependable person, a coercive official, or a reliable device. Trust appears to make the trustee’s discretion and responsiveness part of the reason for proceeding. Baier’s betrayal distinction gives this point phenomenological force: failures of trusted action can be intelligible as injuries to a participant relation, whereas failures of mechanisms invite disappointment or repair of the device (Baier, 1986). Holton’s analysis connects this difference to a stance that makes reactive attitudes intelligible (Holton, 1994). Hawley’s commitment account offers a more

explicitly normative candidate for the added factor (Hawley, 2014).

Behavioral success leaves the added factor undetermined. Suppose two colleagues complete every assigned task. In the first relation, each treats the other's reliance as a reason and makes discretionary adjustments when unforeseen needs arise. In the second, each anticipates strict inspection and performs only the monitored task. Their outputs can coincide across routine episodes. The distinction appears in the structure of reasons, discretion, and response to novel circumstances. A trust theory must therefore specify which counterfactual differences matter and how they can become evidence.

Motive accounts sharpen that requirement. Hardin's encapsulated-interest model explains how B can take A 's interests into account because preserving the relation serves B 's interests (Hardin, 2002). Goodwill approaches ask for a more direct orientation toward the trustor or the entrusted object. Commitment-responsive accounts allow role, principle, or accepted undertaking to carry the relation. These mechanisms can converge in action while diverging under conflict, anonymity, altered incentives, or declining reputation. The profile representation preserves their differences as rival causal and normative bridges.

Pettit's account adds a recursive possibility. Being trusted can itself supply a reason to prove trustworthy, so the attribution may contribute to the conduct that later confirms it (Pettit, 1995). This possibility matters for emergence. A relation can be partly self-supporting through recognition and response, yet the same recursion can be manipulated. Public confidence, idealization, or assigned dependence can motivate performance while exposing the trustor to intensified loss. Recursive efficacy therefore supports a process claim and leaves warrant open.

2.3 Expectation, Attitude, and Participant Relation

This subsection examines the ontology of the trusting orientation. It compares belief-like, affective, practical, and normative interpretations and explains why the paper adopts a profile.

Expectation has an indispensable role. A person who assigns overwhelming probability to betrayal will usually avoid exposure when a feasible alternative exists. Yet a probability estimate underdescribes the way trust organizes action. People can trust while acknowledging meaningful risk, and they can predict compliant conduct while experiencing domination. Holton's distinction between deciding to trust and coming to believe shows that practical commitment and belief update can follow different structures (Holton, 1994). Jones places affective optimism at the center, presenting trust as a way of seeing the trustee's goodwill and competence that shapes interpretation as well as forecast (Jones, 1996).

These accounts locate trust at different levels. A belief-like account can be represented through p in Equation (2). An affective attitude also influences attention, ambiguity resolution, and response to evidence. A commitment account concerns the normative relation between what A counts on and what B has accepted. A participant stance concerns the reasons and reactive attitudes through which each party addresses the other. The dimensions interact, but their interactions are contingent. A person may feel affection while withholding an entrusted task, or accept a professional commitment while feeling limited warmth.

The profile strategy therefore embodies a modest metaphysical position. It treats relational

trust as a structured practical orientation whose realization can include belief, affect, normative expectation, and action. The strategy leaves open whether one dimension is constitutive across every case. Its benefit is diagnostic: an empirical project can report which components it has measured and which philosophical account licenses the move from those components to a trust attribution.

The distinction between first-person and third-person descriptions also matters. A third party may call *A*'s conduct trusting because it involves exposure. *A* may describe it as resignation, necessity, or confidence in a procedure. *B* may experience the same conduct as an unwelcome demand. The relation therefore contains several standpoints. A single global report leaves their disagreement unresolved. A defensible attribution states whose interpretation is used and how conflicting interpretations enter the analysis.

2.4 Trustworthiness, Warrant, and Relational Value

This subsection separates the existence of trust from its grounds and value. The separation prepares the normative profile developed in Section 10.

Trust is commonly treated as an attitude or practical relation, whereas trustworthiness concerns features of the trustee in a domain (McLeod, 2023). Competence is one component: good intention leaves inability consequential. Willingness is another: a capable person may decline the commitment. Reasons and context also matter, because performance produced by threat or hidden surveillance differs from performance responsive to the entrusted stake. Institutional support can make some commitments feasible and render others precarious.

Warrant concerns the relation between *A*'s placement and the available grounds. Its epistemic form asks how evidence supports expectation. Its practical form asks whether the stake and safeguards fit the uncertainty. Its moral form asks whether placing the trust respects both parties and affected others. These forms can diverge. An expectation may be statistically calibrated while the exposure imposed on *B* remains unfair. A morally admirable trustee may still lack the domain competence required by the stake.

Trust can also carry characteristic goods. It can enable coordinated action, reduce defensive effort, support disclosure, recognize agency, and create a space in which commitments become effective. Luhmann's account of trust and complexity gives one social-theoretical expression of this enabling role (Luhmann, 2017). Pettit's recursive mechanism gives another: trust can call forth trustworthiness (Pettit, 1995). These goods remain conditional. The same openness can increase susceptibility to betrayal, manipulation, negligence, and unequal burden.

An account centered only on the value of trust can encourage indiscriminate trust promotion. The appropriate objective is calibrated relational placement. Depending on the domain, this may involve trust, monitored delegation, distributed verification, warranted distrust, refusal, or exit. The distinction also changes empirical evaluation. An intervention that raises a trust score while reducing effective alternatives may represent increased dependence. An intervention that lowers deference while strengthening self-trust and remedy may represent improvement.

2.5 Voluntariness, Burden, and Unwelcome Trust

This subsection analyzes agency on both sides of the relation. It focuses on the extent of choice, the burden of being trusted, and the temporal development of a trusting stance.

Trust is sometimes described through a decision, yet many trusting orientations develop through repeated practice before becoming objects of choice. A person can decide to rely, disclose, delegate, or reduce monitoring. The affective and interpretive orientation accompanying those acts may change more slowly. This difference motivates the multi-timescale model introduced later. It also discourages a binary question asking whether trust was freely chosen at one instant.

The trustor's agency depends on feasible alternatives. A patient assigned to a single provider, a worker dependent on a supervisor, or a child dependent on a caregiver may have substantial exposure and limited exit. Continued participation in such a relation has multiple possible meanings. The analysis should record formal options, effective costs, knowledge, retaliation risk, and access to remedy before interpreting exposure as voluntary placement.

The trustee's agency deserves equal attention. Trust can confer recognition and valuable discretion. It can also assign responsibility that the trustee never accepted, lacks resources to fulfill, or experiences as intrusive. Philosophical discussion of unwelcome trust demonstrates that goodwill alone leaves the demand's legitimacy open (McLeod, 2023). A relational model therefore includes commitments, role authority, refusal, and renegotiation on both sides.

These considerations strengthen the need for a directional episode. Trust from *A* toward *B* changes the opportunities and burdens of each party through different paths. Reciprocity may emerge through mutual responsiveness, but symmetry remains a special case. Ethical evaluation must ask who receives discretion, who carries exposure, who can contest the relation, and who pays for failure.

2.6 Social Process and Organizational Context

This subsection extracts temporal and institutional variables from social and organizational research. Its role is to support process hypotheses while preserving the distinction between a research measure and the philosophical target.

Luhmann relates trust to the management of social complexity, locating it within a broader structure of expectations (Luhmann, 2017). Möllering's reconstruction links expectation, interpretation, and suspension (Möllering, 2001). Organizational models place willingness to accept vulnerability alongside perceived ability, benevolence, and integrity (Mayer et al., 1995; Rousseau et al., 1998). Experimental work on trust, reciprocity, and social history demonstrates how behavior changes with interaction history (Berg et al., 1995). Research on trust repair organizes a large body of findings concerning violation type, attribution, apology, denial, and subsequent response (Lewicki and Brinsfield, 2017).

These literatures establish the practical relevance of time, context, and repair. They also sharpen an interpretive caution: an investment or cooperative choice can be called a trust behavior within an experimental paradigm while remaining compatible with several relational meanings. The present model uses such behavior as evidence with an explicit observation map.

Luhmann and Möllering also supply different accounts of the transition from uncertainty to action. Luhmann treats trust as a way of acting amid complexity, where the future contains more possibilities than an actor can secure in advance (Luhmann, 2017). Möllering reconstructs trust through expectation, interpretation, and suspension, emphasizing the process by which an actor moves beyond available reasons while remaining related to them (Möllering, 2001). The present proposal draws temporal motivation from both. Relational emergence describes the formation of a history-bearing state; Möllering’s suspension and dynamical transition retain distinct meanings, as do social complexity and state-space dimension.

The organizational models introduce another useful distinction. Perceived ability, benevolence, and integrity concern antecedent judgments about the trustee, while willingness to accept vulnerability concerns the trustor’s orientation (Mayer et al., 1995). Cross-disciplinary synthesis likewise emphasizes risk and interdependence (Rousseau et al., 1998). These constructs support the profile architecture, yet they can be measured through static surveys that reveal little about how a relation changes. A process theory needs event order, feedback, persistence, and context alongside cross-sectional associations.

Experimental trust games offer controlled behavior and clear stakes. Berg, Dickhaut, and McCabe show that social history can alter transfers and returns (Berg et al., 1995). The design demonstrates that prior interaction matters under controlled conditions. The philosophical interpretation of the transfer remains open because generosity, inequality aversion, reciprocity, reputation, strategy, and trust may generate overlapping choices. The useful lesson is methodological: behavior becomes more informative when the rival mechanisms and contextual changes are specified.

Repair research makes the temporal issue especially visible. Lewicki and Brinsfield distinguish the violation, its recognition, short-horizon responses, and longer-horizon repair, while reviewing apologies, denials, compensation, monitoring, reframing, forgiveness, and structural arrangements (Lewicki and Brinsfield, 2017). Their review also exposes a measurement problem: studies frequently assume a pre-existing level of trust whose internal structure receives limited direct measurement. The present paper therefore treats rupture as a revealing episode within a longer relation and measures several channels of recovery separately.

The process literature consequently contributes four propositions for model design. Trust develops within histories; institutional conditions shape the meaning of exposure; the same observed choice can express several mechanisms; and repair can follow several timescales. These propositions motivate the dynamical scaffold while leaving the philosophical constitution of trust open.

2.7 Psychoanalytic Address and Clinical Comparison

This subsection locates the Lacanian source concepts and compares adjacent clinical research. Its method is reconstructive: each concept is retained in its native argumentative role before a limited bridge is proposed.

Freud’s writings provide the immediate psychoanalytic ancestry. “The Dynamics of Transference” describes how expectations and relational patterns become actualized within the analytic relation, including their role in resistance (Freud, 1958a). “Observations on Transference-Love” examines love generated in the treatment situation and the technical and ethical demands it places

on the analyst (Freud, 1958b). These texts establish transference as an effect of a relation and its history. They also warn against treating the affect produced in a setting as transparent evidence of the analyst’s personal qualities.

Lacan reformulates transference through the symbolic place of the analyst and the subject supposed to know. The shift changes the question. Transference is organized through both the repetition of earlier affective patterns and the supposition that knowledge concerning the subject’s truth is located in the analytic address (Lacan, 1998). The supposition has causal and interpretive effects while the analyst remains unable to supply a complete guarantee. This combination of efficacy and incompletion makes the concept relevant to trust, provided that transference and trust retain separate definitions.

Lacan’s seminars on transference and the four fundamental concepts of psychoanalysis develop love, knowledge, address, and the subject supposed to know within the analytic relation (Lacan, 2015, 1998). Fink provides a sustained interpretation of Seminar VIII, while Johnston offers a current philosophical overview of Lacan’s conceptual architecture (Fink, 2015; Johnston, 2026). These works support a view of transference as structured by the place from which speech is addressed and knowledge is supposed. A numerical trust variable would require an additional measurement bridge.

The graph-of-desire corpus broadens the bridge beyond the analytic attribution of knowledge. Lacan’s “Subversion of the Subject” and Seminars V and VI develop a layered diagram relating the divided subject, signifying chain, demand, desire, fantasy, drive, and the Other (Lacan, 2006, 2020, 2019). Fink provides a close reading of the essay and graph; Eidelsztein reconstructs its stages and relations in book-length form; Van Haute and Chiesa develop philosophical accounts of the subverted subject and its relation to otherness (Fink, 2004; Eidelsztein, 2009; Van Haute, 2002; Chiesa, 2007). This literature justifies sustained attention to the diagram in Section 4. It also raises a strict limit: the psychoanalytic types of its visual nodes and arrows preclude their treatment as homogeneous variables or causal edges.

Adjacent clinical constructs provide comparisons and remain distinct. Fonagy and Allison connect mentalizing and epistemic trust to therapeutic change (Fonagy and Allison, 2014). Attachment research studies patterns and stability with its own developmental constructs (Fraley, 2002). A person may display attachment alongside weak domain-specific trust, epistemic openness alongside limited practical discretion, or transferential supposition while remaining deeply ambivalent. Section 3 keeps these paths separate.

The comparison yields three levels of relational openness. Epistemic trust concerns openness to communication as personally relevant and generalizable in a mentalization-based clinical theory (Fonagy and Allison, 2014). Attachment concerns affective and regulatory organization across development (Fraley, 2002). Lacanian transference concerns the position of an addressee within speech, desire, repetition, and supposed knowledge. P037’s relational trust profile concerns domain-indexed exposure under discretion and participant-directed expectation. Empirical overlap among these levels is plausible; conceptual equivalence would require arguments absent from the current literature.

2.8 Dynamics, Memory, and Identification

This subsection introduces the mathematical literatures that discipline the formal claims. The discussion separates temporal representation from epistemic recoverability.

Dynamical systems theory provides state, flow, stability, bifurcation, and multi-timescale analysis (Hale and Koçak, 1991). Hysteresis theory formalizes systems whose current response depends on prior input paths (Krasnosel'ski and Pokrovski, 1989). These resources make relational history mathematically consequential. They leave the semantic interpretation of the state to a bridge theory and an empirical design.

System identification asks which structures and parameters can be inferred from inputs and outputs within a specified model class (Ljung, 1999). Control theory supplies observability concepts for recovering state from output (Sontag, 1998). Latent-variable analysis emphasizes the measurement assumptions that connect unobserved constructs with indicators (Bollen, 2002). The present paper combines these ideas through probe-relative equivalence. The result concerns the information content of a declared design, while the meaning of trust remains a conceptual and empirical matter.

2.9 Comparative Translation Protocol

This subsection states the rule governing interdisciplinary transfer. It prevents analogy, interpretation, and mathematical identity from being merged.

Each transfer is recorded through four elements: the source concept in its original role; the target variable or constraint; the bridge premise licensing the relation; and the residual content left untranslated. For example, the Lacanian subject supposed to know motivates a typed state of attributed knowledge and symbolic address. A quantitative implementation would additionally require observable indicators, a scale, a population, and validation evidence. The residual clinical and theoretical meaning remains available for qualitative interpretation. This protocol allows productive formalization while keeping the limits of that formalization visible.

3 Conceptual Architecture of Relational Trust

This section defines the target construct and its neighboring concepts. It moves from a typed episode to a multidimensional profile, then states criteria for emergence and several conceptual separations. Table 2 summarizes the architecture.

3.1 Directional Episode and Domain

This subsection identifies the minimal unit of analysis. It represents trust as directional and domain-specific before considering reciprocity or global character traits.

Definition 3.1 (Candidate trust episode). *For persons or positions A and B , domain d , valued stake q , and interval I , a candidate trust episode is*

$$E_{A \rightarrow B}^{d,I} = (A, B, d, q, I, \mathcal{A}_A, \mathcal{A}_B, \mathcal{K}, \mathcal{X}), \quad (1)$$

Table 2: Construct separation in the relational-trust framework

Construct	Minimal content	Distinguishing evidence requirement
Dependence	One party’s outcome varies with another’s conduct	Counterfactual stake and feasible alternatives
Reliance	Action organized around an expectation of performance	Task-level prediction and planning
Cooperation	Behavior jointly contributes to an outcome	Action and outcome pattern within a declared game or practice
Trust	Directional exposure under another’s discretion with a trust-relevant expectation and participant-directed relation	Typed exposure, expectation, discretion, address, and response across history
Trustworthiness	Features supporting appropriate fulfillment of entrusted stakes	Competence, commitment, reasons, integrity, and context
Attachment	Affective bond or regulatory relation	Construct-specific developmental or clinical evidence
Transference	Address organized through symbolic repetition and supposition	Interpretive and clinical evidence concerning the position of the addressee
Confidence	Generalized expectation regarding events or systems	Evidence about the relevant system while interpersonal address remains optional

where $\mathcal{A}_A$ and $\mathcal{A}_B$ are feasible action sets, $\mathcal{K}$ records relevant commitments or participant-directed reasons, and $\mathcal{X}$ records alternatives, monitoring, sanctions, and exit.

Direction matters because A may trust B in domain d while B adopts a different orientation toward A . Domain matters because testimony, bodily care, money, confidential information, and political representation expose different stakes and call for different capabilities. Reciprocity is therefore represented by linked episodes $E_{A \rightarrow B}^{d,I}$ and $E_{B \rightarrow A}^{d',I'}$. Their coupling is an empirical and interpretive question.

3.2 Trust Profile

This subsection gives the framework’s central comparison object. The profile records heterogeneity and leaves aggregation to an explicitly defended bridge.

Definition 3.2 (Relational trust profile). *The candidate trust profile at time t is*

$$\mathbf{T}_{A \rightarrow B}^d(t) = (p_{A \rightarrow B}^d(t), v_{A \rightarrow B}^d(t), \delta_{A \rightarrow B}^d(t), n_{A \rightarrow B}^d(t), r_{A \rightarrow B}^d(t)), \quad (2)$$

where p denotes task-relative expectation, v exposed stake, δ trustee discretion, n participant-directed normative address, and r history-bearing relational response.

The coordinates can occupy different scales. Expectation may be modeled as a probability under one design; normative address may require categorical, linguistic, or qualitative representation under another. The profile therefore functions as a typed record. A scalar index $T = w^\top \mathbf{T}$ is admissible only after defending commensurability, weights, population invariance, and the decision purpose.

Claim 3.3 (Profile pluralism). *Rival philosophical accounts of trust can be expressed as different admissible regions and bridge conditions over the profile in Equation (2). Shared notation preserves their disagreement concerning constitutive and supporting dimensions.*

For example, a predictive account may emphasize p together with v and δ . A goodwill account adds a motive-related bridge into n and r . A commitment account requires evidence about accepted commitment. A reactive attitude account attends to the meaning of betrayal and the participant stance. The framework supplies comparison space, while philosophical argument supplies the selection rule.

3.3 Relational Constitution and Temporal Formation

This subsection develops the philosophical meaning of calling trust relational and emergent. It distinguishes a relation's participants, constitutive conditions, developmental history, and later causal efficacy.

The word *relational* can make several claims. A weak reading states that trust has two positions, trustor and trustee. A stronger reading states that the trusting orientation concerns how one participant understands another's agency. A constitutive reading adds that some trust properties exist through the interaction itself: a commitment is offered, accepted, interpreted, tested, and revised within a shared history. P037 adopts the stronger and constitutive readings for a bounded class of cases. It leaves room for dispositional or basal forms of trust that extend beyond a single relation.

The relation includes more than the sum of participant traits. Suppose A is generally optimistic and B generally conscientious. Their traits increase the prospect of trust, but they leave open the meaning of a particular disclosure, delegation, or promise. A relation-specific commitment can emerge when B recognizes what A has placed in their discretion and responds in a way that later guides both parties. The history then supplies reasons, expectations, and interpretive precedents generated through their interaction.

This relational surplus remains modest. It requires only a state description whose explanatory role resists replacement by contemporaneous individual states within the declared model and resolution. The qualification matters because an expanded individual-state model might encode the entire shared history. The philosophical point concerns the organization and attribution of that history, while the formal point concerns model comparison.

Temporal formation also admits several modes. Trust may begin through explicit assurance: B accepts a responsibility and A acts upon it. It may grow through repeated ordinary fulfillment. It may appear quickly under urgent dependence, where evidence remains sparse. It may be inherited from a role or institution. It may be transferred from an earlier relation or attached to a position of supposed knowledge. Each mode gives the initial profile a different structure and calls for different evidence.

Emergence therefore concerns a transition in organization. A universal hidden threshold lies outside this definition. Before the transition, episodes may be connected only by an observer's chronology. After the transition, an earlier response functions as a shared precedent or a partic-

ipant's durable orientation and alters what later actions mean. The transition may be gradual, discontinuous, contested, or visible only through later events.

Retrospective reinterpretation complicates the temporal order. A later rupture can recast an earlier fulfillment as impression management. A later act of care can reveal that an ambiguous earlier silence expressed restraint. Such changes affect the present meaning of the earlier event while preserving its physical occurrence. The event history should therefore store both event time and later interpretive revisions.

The relational account also includes prospective openness. Trust concerns an agent whose future response retains meaningful discretion over an open field of action. The trustor acts under a view of how the trustee may respond to reasons, commitments, and circumstances that remain partly unspecified in advance. This openness connects the philosophical account with the Lacanian theme of incomplete guarantee and the formal theme of partial identification.

Claim 3.4 (Historically constituted relation). *For the target class of interpersonal cases, relational trust is historically constituted when prior episodes establish participant-relevant expectations, commitments, interpretations, or response patterns that alter the meaning and feasible course of later episodes. Causal persistence supports the claim; trust-specific interpretation requires the profile dimensions and bridge premises.*

3.4 History-Bearing Emergence

This subsection specifies the sense of emergence used throughout the paper. It distinguishes temporal efficacy from metaphysical novelty and normative value.

Definition 3.5 (Weak relational emergence). *A relational state exhibits weak emergence over horizon h when it summarizes typed interaction history, persists beyond the event that produced it, and changes the distribution of at least one later action or interpretation under an admissible common context.*

Definition 3.6 (Reciprocal relational emergence). *Weak emergence becomes reciprocal when one party's response to another party's exposure or address updates the relational state, and that update later modifies the conduct of at least one participant in a further episode.*

These definitions are model-relative. They assert a mediated causal role for history. Similar loops can sustain fear, domination, habit, resentment, or strategic accommodation. A trust attribution therefore requires additional conceptual typing and rival-mechanism comparison.

3.5 Relational and Normative Separations

This subsection states boundaries that guide the later formal and empirical analysis. Its purpose is to prevent process evidence from carrying conclusions that require independent premises.

Reliance can exist with minimal interpersonal address, as when a person relies on an automated mechanism. Cooperation describes a pattern of coordinated action and can arise under compulsion. Dependence concerns counterfactual stakes and can be involuntary. Trustworthiness concerns the

trustee and context; trust concerns the trustor's relation toward the trustee. Attachment concerns a bond and regulatory history. Transference concerns how an addressee occupies a symbolic place. Each relation can interact with trust while preserving a separate evidential burden.

The framework also separates existence from evaluation. Evidence that a trust relation has formed leaves open whether B is trustworthy, whether A 's placement is warranted, whether the relation benefits either party, and whether its institutional setting is just. This separation becomes especially important when alternatives are constrained or when deference is socially distributed.

3.6 Boundary Cases and Interpretive Tests

This subsection tests the conceptual architecture through five contrasting cases. The cases isolate dependence, discretion, normative address, transference, and institutional mediation before the dynamical formalization begins.

Reliable scheduling. A commuter plans around a train timetable whose recent accuracy is high. The case contains expectation and practical reliance. The train system has limited agency in the relevant description, and a late train ordinarily disappoints the commuter. Interpersonal betrayal is absent from the relation. This case shows why high p alone supplies insufficient conditions for the target form of trust.

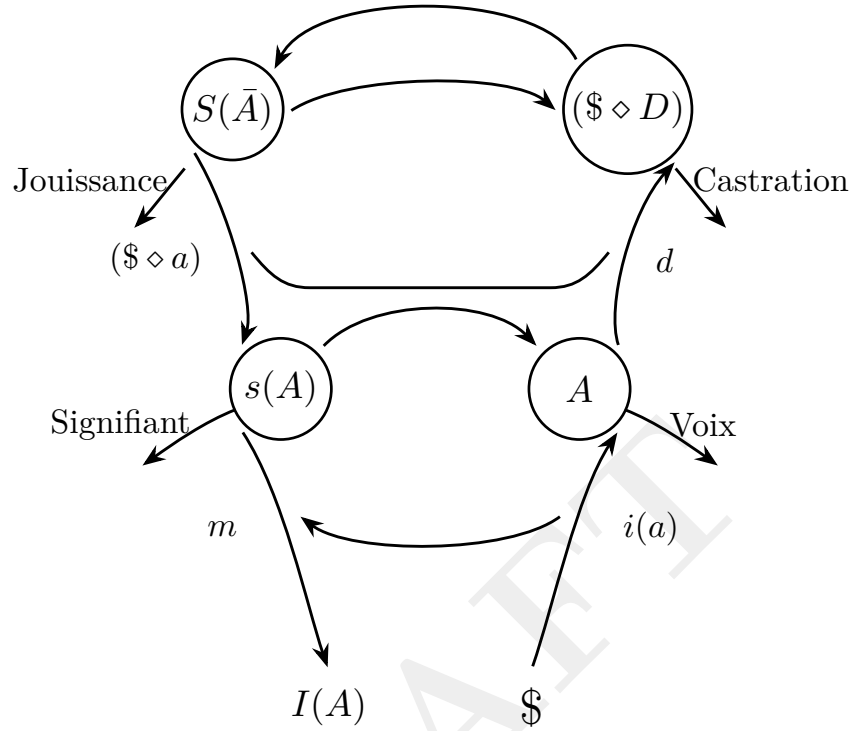
Monitored professional performance. An employee completes a sensitive task under continuous audit and a detailed rule set. The employer expects success and has placed a stake in the employee's performance. Yet discretion is narrow, sanctions dominate the context, and the employee's response to the employer's reliance may carry little causal weight. The relation may contain institutionally warranted reliance while its trust-specific profile remains thin.

Unwelcome personal disclosure. A person discloses highly sensitive information to an acquaintance and expects confidentiality. The acquaintance never accepted this role and lacks the capacity to carry it safely. The trustor's exposure and normative expectation may be genuine, while the placement burdens the trustee and remains poorly warranted. The case separates the existence of a trusting orientation from a legitimate or reciprocal trust relation.

Expert interpretation. A patient attributes exceptional insight to a clinician and discloses material under that supposition. The clinician may be competent and trustworthy, and the relation may also be organized through transference. Evidence of disclosure and deference leaves these mechanisms entangled. Changes following an acknowledged limit, disagreement, or error may help distinguish trust in professional commitment from a supposed guarantee of knowledge.

Constrained care relation. A dependent person receives reliable care from the only available provider. Exposure is high, exit is costly, and gratitude coexists with fear of service loss. Repeated cooperation can form a history-bearing relation, yet the effective alternatives remain central to its

Figure 1: Complete graph of desire, redrawn in TikZ from the standard diagram in Lacan’s “Subversion of the Subject.” P037 uses the graph as a conceptual source for address, desire, fantasy, drive, identification, and symbolic incompleteness. Its arrows retain heterogeneous conceptual functions.



interpretation. Trust, necessity, attachment, and institutional dependence may all contribute to the observed trajectory.

The cases serve two purposes. First, they demonstrate that the profile coordinates can vary independently. Second, they identify informative transitions: changes in discretion, monitoring, accepted commitment, supposed knowledge, and effective alternatives. Those transitions guide the later probe family while remaining subject to ethical limits.

4 Lacanian Structure of Address and Supposition

This section reconstructs a bounded Lacanian contribution to the theory of relational trust. It presents the structure of address, the subject supposed to know, the complete graph of desire, and symbolic nonclosure, then specifies their translation into the model. Figure 1 supplies the conceptual diagram; Figure 2 displays the translation boundary into the later formal model.

The complete graph belongs to Lacan’s graph-centered work in Seminars V and VI and “Subversion of the Subject” (Lacan, 2006, 2020, 2019). Specialist interpretations emphasize its staged construction and warn that its geometry serves an argument about signification and subjectivity before it serves any mathematical analogy (Fink, 2004; Eidelsztein, 2009; Van Haute, 2002). Table 3 is therefore a navigation aid. The position descriptions require the paths connecting them, and the trust column records questions whose translation requires independent argument.

Table 3: Principal positions in Figure 1 and their limited relevance to relational trust

Position	Lacanian orientation	Trust-research relevance
$\$$	Divided subject	Trustor and trustee exceed their reported self-conceptions and assigned roles
A	Big Other	Symbolic locus of address, code, authority, and attributed guarantee
$s(A)$	Signification of the Other	Meaning produced through punctuation and later uptake of an address
$I(A)$	Ego ideal	Symbolic point of evaluation and recognition
$i(a)$	Specular image	Imaginary form supporting an image of the other or self
m	Ego	Imaginary organization of self-description and relation
d	Desire	Orientation mediated by the enigma of the Other's desire
$(\$ \diamond a)$	Fantasy	Structured relation to the object-cause that organizes an answer to that enigma
$(\$ \diamond D)$	Drive	Circuit of the subject in relation to demand
$S(\bar{A})$	Signifier of lack in the Other	Limit of final symbolic guarantee and complete knowledge

4.1 Address and the Place of the Other

This subsection describes the relational position through which speech acquires an addressee. It emphasizes relational structure over personality attribution.

In Lacanian theory, speech is organized through the symbolic order and through the place of the Other. An utterance can seek information, recognition, love, authorization, or an answer concerning the speaker's own desire. The empirical person who receives the utterance and the symbolic place occupied in the address are analytically distinguishable. This distinction is useful for trust research because a person may entrust something to what another represents: professional knowledge, institutional authority, care, judgment, or access to a supposedly coherent order.

The distinction also complicates a simple dyadic model. A relation written $A \rightarrow B$ can include institutional rules, inherited signifiers, role expectations, and imagined audiences. Equation (1) therefore includes context $\mathcal{X}$ and commitment structure $\mathcal{K}$. The symbol B denotes an embodied participant occupying one or more positions within a symbolic and institutional field.

4.2 Lower Chain of Signification and Relational Meaning

This subsection reads the lower level of the graph as a constraint on the interpretation of trust episodes. It connects address, punctuation, voice, and imaginary identification while preserving their distinct types.

The lower horizontal chain passes through A and $s(A)$. In a common reading, A marks the locus of signifiers and $s(A)$ the signification produced through punctuation. The curved return expresses the dependence of an earlier element's meaning on later completion (Lacan, 2006; Fink, 2004). The chain is therefore poorly represented by a sequence in which each token receives a fixed meaning at arrival. An address acquires its sense through completion, response, and later placement within a discourse.

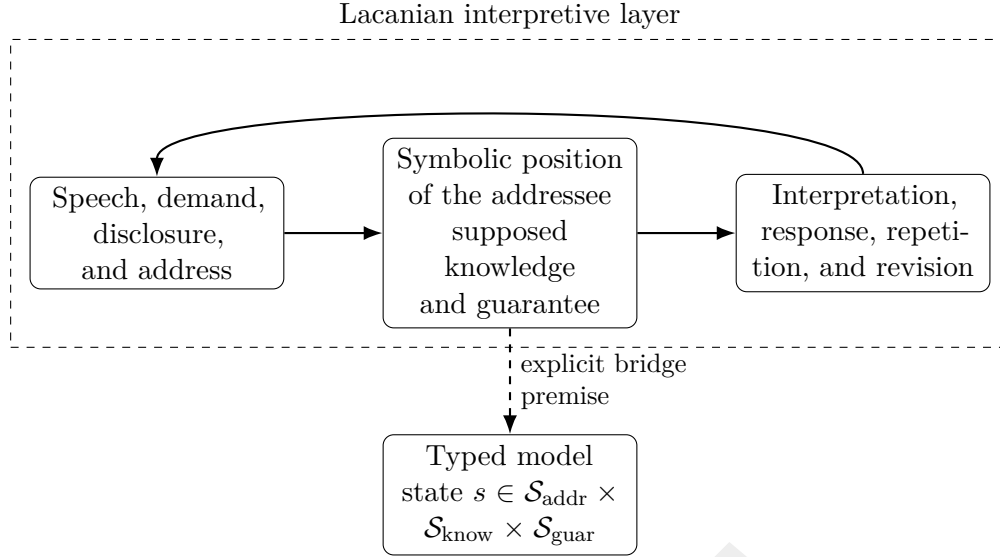


Figure 2: Interpretive bridge from Lacanian address to a typed model state. The dashed arrow marks a translation obligation; the model state preserves only the declared distinctions.

Trust relations display an analogous temporal feature. “You can count on me” can function as reassurance, professional formula, seduction, threat, or accepted commitment. Its relational meaning depends on speaker position, addressee, domain, later conduct, and institutional convention. Fulfillment can stabilize one interpretation. A later revelation can reorganize the meaning of the original assurance. This analogy motivates storing interpretations across evaluation times while leaving the physical order of utterances unchanged.

The path between *Signifiant* and *Voix* also warns against reducing an address to propositional content. Timing, tone, silence, repetition, and the fact of being addressed can alter the relation. A transcript can preserve words while losing the position from which they were spoken and heard. The empirical programme should therefore combine linguistic material with context and participant interpretation.

The lower chain intersects the imaginary relation involving $i(a)$ and m . Images of a reliable expert, caring partner, loyal colleague, or independent self can shape what evidence receives attention. The ego and specular image are distinct from the symbolic position of the Other. Trust research should likewise separate an image of the trustee from role commitments, observed competence, and the position to which an appeal is addressed.

4.3 Demand, Desire, and the Other’s Enigma

This subsection connects the graph’s demand and desire structure with the motivation problem in trust. It interprets the phrase *Che vuoi?* as a relational question whose possible answers organize exposure.

Lacan distinguishes need, demand, and desire. A need articulated in language becomes a demand addressed through the signifiers and expectations of the Other. Satisfaction of the requested object leaves a relational remainder, including the demand for recognition or love. Desire is sustained

through this remainder and through the mediation of the Other (Lacan, 2006, 2019; Van Haute, 2002). The graph places desire d in relation to fantasy and to the upper level of enunciation.

Trust also contains an inquiry into the other's orientation. The trustor asks, often implicitly: What moves this person? How will my dependence matter to them? What do they want from me, from the entrusted object, or from the relation? Philosophical theories answer differently. Encapsulated interest, goodwill, accepted commitment, role integrity, and responsiveness to reliance are candidate answers. The Lacanian question adds that the trustor's account of the other's motive is organized through symbolic and fantasmatic structures as well as evidence.

The phrase *Che vuoi?* condenses several directions. It can express the subject's inquiry into what the Other wants, the demand experienced as coming from the Other, and the subject's encounter with its own desire through that demand. In a trust relation, A can interpret B 's request as an invitation to cooperate, a test of loyalty, a demand for surrender, or a call for care. The interpretation shapes the exposure before B 's intention has been settled.

This structure illuminates unwelcome trust. A person can be positioned as the one who should know, protect, decide, or remain available. The attributed role can generate a normative demand that the person never accepted. A theory of trust focused only on the trustor's attitude may miss this imposition. The graph directs attention to the demand experienced by the trustee and to the symbolic authority through which that demand is conveyed.

The Lacanian account also complicates motive verification. Complete access to the other's desire remains unavailable, and self-report leaves part of the gap open. Responsible trust therefore relies on situated grounds, revisable interpretation, bounded exposure, and response to new evidence. The point is epistemic humility with practical structure, coupled with a clear distinction from generalized suspicion.

4.4 Fantasy and the Organization of Exposure

This subsection examines fantasy as a structure that can stabilize an answer to the Other's enigma. It relates fantasy to trust placement while preserving the psychoanalytic specificity of $(\$ \diamond a)$.

In the graph, fantasy places the divided subject in relation to object a and supports a way of navigating desire. It is more than an explicit false belief. It organizes positions, recurring scenes, expectations, and the significance of objects (Lacan, 2006, 2019; Eidelsztein, 2009). Chiesa's philosophical reconstruction situates such structures within Lacan's developing account of subjectivity and otherness (Chiesa, 2007).

Trust placement can be filtered through recurring relational scenes. A person may experience care as secure only when the other appears omniscient, loyalty as real only when sacrifice is demanded, or competence as convincing only when certainty is performed. These patterns can organize exposure and interpret ambiguous events. They may coexist with accurate judgment, and they may also direct trust toward an untrustworthy person or away from a trustworthy one.

The term fantasy should therefore carry a limited role in P037. It names a candidate organization of interpretation and desire. Its extension to every mistaken trust judgment would exceed that role. Empirical use would require discourse material, repeated patterns, alternative readings, and

appropriate clinical competence. A survey scale labeled “fantasy” would lack this bridge.

Fantasy also changes how repair is understood. An apology may address the material violation while leaving intact a relational scene in which the trustee must guarantee completion. Conversely, the acknowledgment of limitation may initially reduce confidence while enabling a relation organized around realistic competence and accountable commitment. Repair can therefore transform the structure of placement as well as restore a behavioral expectation.

4.5 Drive, Repetition, and Relational Persistence

This subsection reads the upper paths of the graph as a warning about the meaning of repetition. It distinguishes persistent relational circuits from trust-specific continuity.

The upper right position ($\$ \diamond D$) places the divided subject in relation to demand at the level of drive. The upper left position $S(\bar{A})$ marks the lack of a final signifier in the Other. Jouissance and castration mark the upper boundaries in the supplied diagram. The resulting paths concern repetition, demand, enjoyment, and limit; their conceptual roles remain separate from a second complete code above ordinary speech (Lacan, 2006; Eidelsztein, 2009).

A repeated relational pattern may therefore possess strong stability while remaining poorly described as trust. Cycles of testing, reassurance, rupture, and reunion can persist because each episode renews the conditions for the next. Institutional dependence can produce repeated cooperation. Transference address can sustain disclosure despite recurring disappointment. Dynamical persistence establishes organization and leaves its trust-specific and normative meaning to further analysis.

This distinction is important for the paper’s use of attractors and hysteresis. A stable regime has an open normative and interpretive status. It may encode secure trust, vigilance, coerced compliance, idealization, or a drive-like return. The event types, participant meanings, effective alternatives, and normative profile determine which interpretation remains plausible.

Rupture can expose the circuit. When a familiar reassurance ceases to restore the prior relation, the trajectory may branch toward renegotiation, intensified testing, refusal, or exit. Such branching offers longitudinal evidence, yet it also concerns vulnerable participants. The research programme uses naturally occurring events and low-risk contrasts while severe betrayal remains outside experimental induction.

4.6 Divided Subjects and Asymmetric Reciprocity

This subsection develops the implications of the barred subject for mutual trust. It replaces ideals of complete transparency with answerable and revisable relations.

The barred subject indicates division through signifying representation and a gap between enunciation and the statement. A participant’s report remains a valuable act of interpretation and evidence, while its relation to desire, affect, and later conduct remains open. Third-person observation is similarly partial. The investigator occupies an institutional and symbolic position that can influence what participants say and how they understand the inquiry.

Mutual trust consequently concerns reciprocal acknowledgment of limited knowledge, accepted

commitments, bounded discretion, and effective response when expectations fail. Each direction $A \rightarrow B$ and $B \rightarrow A$ can retain different stakes, domains, and histories. Reciprocal answerability therefore admits asymmetric affection and confidence reports.

The conception of answerability developed here is practical. A participant can give reasons, acknowledge consequences, revise conduct, contest an attribution, and support remedy. Answerability preserves division and uncertainty while creating a relational form for acting within them. Trust becomes a structured willingness to expose a stake under conditions of response and revision, with transparent access treated as an unavailable ideal.

4.7 Transference and Supposed Knowledge

This subsection reconstructs transference as an organization of address and supposition. It then states its relationship to trust in bounded terms.

Lacan's formulation of the subject supposed to know gives transference a structural relation to knowledge (Lacan, 1998). The analysand's speech can position the analyst as the locus at which the truth of symptoms is supposed to be available. This supposition has effects even when the analyst possesses only partial knowledge of that truth. Seminar VIII further develops the relation among transference, love, desire, and lack (Lacan, 2015; Fink, 2015). The analytic relation is distinctive, yet the structural distinction between an actual person and an attributed place can inform other relations when handled cautiously.

Claim 4.1 (Transferential conditioning). *Transferential supposition may condition the formation, direction, intensity, or interpretation of a candidate trust relation. Its presence is compatible with trust, distrust, ambivalence, strategic compliance, and resistance. A trust attribution therefore requires evidence beyond the presence of supposed knowledge.*

The claim avoids two reductions. First, trust is larger than epistemic deference: practical care, confidentiality, bodily safety, and fidelity involve other domains. Second, supposed knowledge has effects while providing only a partial guarantee. A person may disclose because the addressee is invested with knowledge while simultaneously expecting disappointment or betrayal.

Table 4 separates six positions that often converge in lived relations. The distinctions matter because the same person can occupy several positions at once, and because a transition in one position can transform the meaning of the others.

Actual expertise can justify confidence about a bounded task. Supposed knowledge concerns the place from which an answer is expected. Symbolic authority concerns the social and linguistic conditions under which that place is recognized. Idealization organizes an image of unusual coherence or value. Relational trust adds exposure, discretion, and a practical orientation toward the addressee. A physician, teacher, analyst, intimate partner, or technical system can consequently receive all six attributions in different proportions. Conceptual clarity depends on keeping their grounds and revision conditions separate.

Freud's clinical writings describe transference as the activation of expectations and relational patterns within treatment, including affectionate and hostile forms (Freud, 1958a,b). Lacan's reformulation places special weight on the structure created when an addressee is supposed to know

Table 4: Distinctions among expertise, supposition, authority, confidence, idealization, and relational trust

Relational position	Primary basis	Interpretive significance
Actual expertise	Demonstrable competence within a specified domain	Supports task-relevant reliance when competence and conditions align
Supposed knowledge	Knowledge attributed through the structure of address	Organizes speech and expectation before the attributed knowledge is verified
Symbolic authority	Institutionally or culturally recognized place of judgment	Shapes whose speech counts, what can be disclosed, and which interpretations acquire force
Reported confidence	Participant report concerning expected conduct or outcome	Supplies evidence about an avowed attitude under a stated description
Idealization	Elevation of an addressee or relation within an imaginary or normative economy	Can intensify attachment, obscure limits, and amplify later disappointment
Relational trust	Directional placement of an exposed stake under another's discretion and answerability	Requires domain, history, interpretation, and rival-mechanism assessment

(Lacan, 1998). This structural account shifts attention from the accuracy of an isolated belief to the organization of a speaking relation. Speech can become oriented toward an addressee whose replies, silences, and failures acquire exceptional significance.

The bridge to ordinary trust remains conditional. Clinical transference has a specific institutional setting, technique, and aim. Friendship, care, education, professional advice, and organizational leadership have different roles and remedies. P037 therefore borrows a question of relational position: which place has the addressee acquired, through which history, and with what effects on exposure and interpretation? Each domain still requires its own account of obligation, competence, consent, power, and exit.

Transference also illuminates why growing confidence and growing dependence can diverge. A sequence of interpretations that feels revealing may deepen the supposition of knowledge even when practical trustworthiness remains unchanged. A failure can weaken reported confidence while strengthening a demand for an authoritative answer. Conversely, an addressee who acknowledges limits can reduce idealization while supporting a more answerable relation. These possibilities motivate a vector description and a temporal analysis.

Transformation of the relation has equal theoretical importance. Analytic work often concerns changes in the subject's relation to supposed knowledge, desire, and repetition (Lacan, 2015; Fink, 2015). A trust study can ask whether an attribution of guarantee becomes a bounded assessment of competence, whether idealization gives way to negotiated commitment, or whether disclosure becomes increasingly dependent on the addressee's privileged place. These trajectories carry different meanings even when the observed frequency of disclosure remains stable.

4.8 Symbolic Nonclosure

This subsection converts the absence of a complete guarantee into a constraint on the target framework. The result is interpretive and model-relative.

A symbolic order can coordinate expectations and commitments while leaving residual ambiguity concerning motives, future action, and the meaning of an event. Trust occupies this residual space because another person's discretion has practical significance. A relation governed by fully determined output would resemble reliable mechanism use more closely than interpersonal trust. This observation supports a nonclosure condition focused on responsible action under uncertainty.

The graph of desire locates this limit at $S(\bar{A})$, the signifier of a lack in the Other. Within the present argument, the position resists an image of the symbolic order as a complete repository of final authorization. Institutional rules, professional credentials, shared language, and explicit promises can stabilize a relation. Their coordinating force coexists with residual questions about application, interpretation, and future response. The relation therefore combines symbolic mediation with practical contingency.

This point differs from general skepticism. General skepticism asks whether knowledge of another mind is available. Symbolic nonclosure concerns the structure through which assurances acquire intelligibility and authority. A promise can be understood clearly while its fulfillment remains contingent. A credential can establish training while leaving judgment in an unforeseen case open. A shared account of a rupture can coordinate repair while allowing different memories and stakes to persist. Trust develops within these bounded forms of incompleteness.

Symbolic nonclosure also supplies an interpretive discipline. Every declaration of trust is made under a vocabulary, role structure, and available narrative. Those resources enable expression and delimit it. A participant may articulate confidence while lacking a socially acceptable idiom for dependence, fear, or ambivalence. The investigator's coding scheme introduces a further articulation. The resulting evidence is valuable and positioned. Its evidential weight grows through triangulation across conduct, reports, history, and carefully chosen contrasts.

Let $\Pi_{\text{sym}}(H_t)$ denote the distinctions fixed by the available symbolic articulation of history, and let $\Theta_{\text{compatible}}(H_t)$ denote the mechanisms compatible with the declared evidence. The framework imposes

$$\Pi_{\text{sym}}(H_t) \subsetneq \Theta_{\text{compatible}}(H_t). \quad (3)$$

Equation (3) is an authored formal obligation motivated by Lacanian nonclosure. It records that articulation leaves multiple compatible mechanisms. Its status is a proposed interpretive constraint, distinct from a theorem derived from Lacan or a demonstrated empirical universal.

The strict inclusion in Equation (3) applies relative to the framework's declared target and evidence. A particular engineering subsystem may be fully identified under a sufficiently strong model and probe family. Relational-trust inquiry retains semantic and historical questions concerning the meaning of acts, the domain of exposure, and the participants' positions. The formal expression records that bounded research commitment. Empirical work can revise its domain and strength.

4.9 Typed Symbolic State

This subsection specifies the narrow formal residue of the Lacanian analysis. It retains distinct kinds of supposition and avoids an ungrounded scalar score.

Define

$$s_{A \rightarrow B}^d(t) \in \mathcal{S}_{\text{addr}} \times \mathcal{S}_{\text{know}} \times \mathcal{S}_{\text{guar}}, \quad (4)$$

where the components record the position of address, the type of knowledge attributed, and the form of guarantee supposed. These spaces can be categorical, set-valued, linguistic, or omitted when evidence is unavailable. Numerical use requires a separate operationalization.

A change in s can alter the interpretation of the same act. Silence may be read as containment, indifference, expertise, or withdrawal. Monitoring may be read as care, accountability, suspicion, or domination. The next section gives this interpretive state a place within an adaptive dynamic while preserving its status as a model proposal.

The three coordinates in Equation (4) preserve distinct questions. The address coordinate concerns the person or place toward which an utterance is oriented. The knowledge coordinate concerns the kind and extent of knowledge attributed there. The guarantee coordinate concerns the source of assurance invoked, including expertise, office, moral commitment, shared history, or idealized coherence. A coding scheme can use ordered categories, sets of participant terms, or competing qualitative interpretations. Numerical coordinates become appropriate only after a measurement argument establishes their meaning and invariances.

The typed state also supports disagreement. Participant, addressee, observer, and institution may assign different symbolic positions to the same exchange. The model can retain these assignments as indexed states $s^{(A)}, s^{(B)}, s^{(O)}, s^{(I)}$ or as a set of admissible interpretations. Such multiplicity can be substantively informative. Persistent disagreement about the addressee's authority may explain a trajectory more effectively than a prematurely averaged score.

The formal residue remains deliberately narrower than the graph. Fantasy, drive, signification, voice, and the divided subject retain roles in qualitative interpretation and in the design of rival explanations. Equation (4) captures only the distinctions required for the later dynamics. This selective translation protects the conceptual density of the source framework while exposing the assumptions used by the mathematical model.

5 Philosophical Argument for Relational Emergence

This section states the paper's central argument independently of its mathematical implementation. It identifies the explanatory target, develops a conditional premise sequence, and examines the roles of history, contingency, meaning, and normativity. The argument establishes conditions under which an emergence vocabulary earns explanatory use; it leaves metaphysical and empirical alternatives available for comparison.

5.1 Explanatory Target and Levels of Description

This subsection distinguishes the phenomenon to be explained from the evidence used to study it. It organizes the account across participant, relational, institutional, and observational levels.

The target is a directional relation in which one participant places a domain-specific stake under another participant's discretion, addresses that participant through an expectation or commitment, and carries a history that shapes later interaction. The target includes more structure than a favorable prediction. It can involve affect, practical vulnerability, recognized obligation, interpretive orientation, and a retained response to fulfillment or rupture. Rival philosophical theories can assign different necessity and weight to these dimensions.

Four levels contribute to an explanation. The participant level concerns capacities, avowed attitudes, affects, expectations, and practical options. The relational level concerns patterns whose identity depends on the two directed positions and their history. The institutional level concerns roles, sanctions, permissions, material dependencies, and available exits. The observational level concerns the probes, coding practices, and inferential models through which researchers encounter the other levels. Each level can change while selected indicators at another remain stable.

Relational language earns explanatory value when it identifies dependence that participant-level inventories leave unresolved. Consider two dyads whose members receive the same scores for generalized confidence, risk preference, and cooperative disposition. One dyad has a history of acknowledged vulnerability and negotiated repair. The other has a history of monitored compliance under constrained exit. Equal inventories can coexist with different meanings of disclosure, different responses to monitoring, and different future paths. The relational description identifies historically organized dependence among acts, interpretations, and available responses.

This position permits multilevel explanation. Participant dispositions help produce relational patterns; relational patterns alter later participant expectations and action; institutions shape both. Emergence in this paper names a process-level organization within that reciprocal dependence. It carries a modest ontological commitment: a relation can possess historically constituted causal and interpretive properties whose description requires reference to the organized interaction. Strong claims about irreducible substances or universal laws remain outside the present scope.

Definition 5.1 (Relational emergence). *A relational pattern exhibits process-level emergence within a declared domain when an interaction history produces a persistent organization that changes the meaning, probability, or available path of later interaction, and when an adequate explanation of that change requires relationally indexed history in addition to contemporaneous participant and contextual states.*

The definition has explanatory, semantic, and counterfactual aspects. Persistence concerns retention across time. Organization concerns patterned dependence among events and positions. Explanatory requirement concerns the comparative performance of models that include relational history and models restricted to contemporaneous states. Semantic dependence concerns the way later acts can acquire meaning from earlier commitments and responses. Counterfactual dependence concerns differences in future trajectories across histories that share selected present indicators.

5.2 Conditional Argument Sequence

This subsection presents the main inference in an explicit sequence. Each premise is defeasible and receives a corresponding research obligation.

Assumption 5.2 (Trust-specific articulation). *A trust attribution requires an articulated bridge from observed conduct to a trust-relevant profile. Cooperation, disclosure, confidence reports, and repeated success remain compatible with several causal and interpretive mechanisms.*

The assumption follows from the philosophical dispute over reliance and trust. Predictive expectation, goodwill, commitment, affective security, and a participant stance offer different accounts of the trust-specific factor (Baier, 1986; Jones, 1996; Holton, 1994; Hawley, 2014; McLeod, 2023). The profile strategy retains this dispute as a set of bridge alternatives. Empirical evidence can then test consequences of an interpretation while retaining the interpretation as an independent premise.

Assumption 5.3 (Historically mediated response). *Some trust-relevant acts receive their practical and relational significance through earlier exposure, fulfillment, rupture, acknowledgment, or repair.*

A promise illustrates the premise. Its later fulfillment matters partly because an earlier utterance created an expectation and made a response answerable. Repair illustrates a stronger form. An apology, explanation, or changed practice acquires reparative significance through its relation to a recognized injury. An isolated behavioral description omits this historical typing. The premise remains domain-sensitive because routines and one-shot encounters can require thinner historical accounts.

Assumption 5.4 (Persistent relational organization). *A subset of interaction histories yields retained organization that influences later interpretation, exposure, and response across more than one event.*

This premise is empirical in application. Attachment research, organizational trust research, and studies of repair provide plausible sources of hypotheses about persistence (Fraley, 2002; Mayer et al., 1995; Rousseau et al., 1998; Lewicki and Brinsfield, 2017). Their constructs and populations differ, so each transfer requires validation. The premise can fail where a history leaves little trace, where institutional turnover resets the relation, or where observed persistence reflects a stable participant trait.

Assumption 5.5 (Relationally discriminating comparison). *The emergence attribution receives support when history-sensitive explanations outperform declared participant-only, context-only, and measurement-artifact rivals on prospective or intervention-sensitive evidence.*

The premise converts relational emergence from a verbal redescription into a comparative obligation. A history variable earns a role through incremental prediction, counterfactual discrimination, interpretive adequacy, or successful forecast of response to a low-risk change in context. Model comparison remains relative to the rivals actually specified. Qualitative process evidence can also discriminate mechanisms by showing how participants connect an earlier event to a later decision.

Assumption 5.6 (Trust-specific rival survival). *The relational process receives a trust interpretation when its profile and trajectory fit an articulated account of trust and withstand comparison with coercion, strategic compliance, habit, attachment alone, role conformity, idealization, and transference supposition.*

The assumption gives Lacanian analysis a precise position. Transference supposition can be one mechanism organizing exposure and interpretation. Its presence may coexist with relational trust, yet by itself supplies insufficient grounds for the trust-specific profile. A comparable discipline applies to attachment and strategic cooperation. Each can support, imitate, intensify, or constrain a trust relation depending on history and context.

Proposition 5.7 (Conditional relational-trust emergence). *Given Assumptions 5.2 through 5.6, a history-bearing relation can receive a defensible process-level emergence attribution and a separately argued trust interpretation. The strength of the conclusion is indexed to the construct, domain, population, history representation, rival set, evidence, and probe family.*

The proposition separates two inferential steps. The first concerns the emergence of a consequential relational organization. The second concerns its interpretation as trust. Evidence for persistent dyadic memory can support the first while leaving the second unsettled. Strong participant testimony and a philosophically coherent trust profile can support the second while causal evidence for an emergent process remains preliminary. Keeping these steps separate prevents mathematical fit from deciding conceptual identity.

5.3 Constitutive History and Retrospective Meaning

This subsection develops the strongest philosophical reason for retaining history in the account. It distinguishes historical causation from the constitution of relational meaning and explains retrospective reorganization.

Historical causation occurs when an earlier event changes a later state. A reward can reinforce conduct, a threat can induce compliance, and repeated success can update an expectation. Constitutive history concerns a different relation. The identity of a later event depends partly on its place within a history of address, commitment, and response. The same words can function as a first promise, a renewal, a reluctant concession, an acknowledgment of rupture, or a ritual emptied of credibility. Physical description and contemporaneous self-report may underdescribe this difference.

Trust relations commonly combine both forms. Earlier fulfillment can causally increase willingness to accept exposure. It can also become a precedent through which a later request is interpreted. A rupture can reduce confidence and simultaneously reorganize the meaning of earlier episodes. Conduct previously experienced as care may be reinterpreted as control; discretion previously experienced as respectful may be reinterpreted as neglect. Retrospective change retains the occurrence of the earlier event while altering its place in the relation's intelligible history.

Lacanian accounts of signification sharpen this point. Meaning emerges through differential relations and punctuation across a signifying chain (Lacan, 2006, 2020; Fink, 2004). P037 uses

that insight as a philosophical constraint whose empirical-law status remains open. A trust event receives meaning through later uptake, symbolic position, and the available terms of narration. This framework therefore treats event typing as revisable and participant-indexed.

Retrospective meaning creates a methodological demand. Researchers should preserve time-stamped reports and action records while allowing later accounts to reinterpret their significance. Replacing early records with the latest narrative would erase change; freezing the earliest interpretation would erase retrospective organization. A layered record can retain occurrence, contemporaneous interpretation, later reinterpretation, and investigator coding as distinct entries.

Claim 5.8 (Dual historicity). *Relational trust can display causal historicity, in which earlier events alter later responses, and semantic historicity, in which later developments alter the relational meaning assigned to earlier events. A mature process account should state which form its evidence supports.*

Dual historicity also clarifies repair. Repair can influence future behavior and revise the shared account of a rupture. Agreement about the entire past is unnecessary for practical repair. Participants may reach a workable account of responsibility, remedy, and future safeguards while retaining different experiences of the event. Relational continuity can therefore include durable disagreement.

5.4 Counterfactual Dependence and Replaceability

This subsection specifies the counterfactual content of a relational claim. It examines partner substitution, history substitution, and institutional change as distinct tests.

A participant-level account predicts later conduct from each person's current state and context. A relational account predicts that selected substitutions will change the trajectory even when those participant-level descriptions are held fixed as far as the design permits. Three substitutions are especially informative. Partner substitution changes the addressee while preserving a task. History substitution compares relations with different trajectories and similar current reports. Institutional substitution changes rules, monitoring, or exit while preserving the participants. Each probes a different dependence.

Partner-specificity requires careful interpretation. A history with one person can yield expectations that generalize to a role or population. A professional relation can remain appropriately role-based and still involve trust. The relevant question concerns which features travel across substitution and which remain tied to the relation. Generalization itself can become an outcome, with relational formation evaluated separately.

Replaceability also has a semantic dimension. An apology delivered by a substitute may compensate materially while leaving a relational demand unanswered. A task successfully transferred to another colleague may restore organizational function while ending interpersonal trust. Conversely, a role may be the appropriate bearer of the relevant obligation, so a qualified substitute can fulfill it. Domain analysis determines the unit whose continuity matters.

These counterfactuals resist an isolated-dyad picture. Institutions allocate authority, record histories, and define channels for appeal. Material conditions shape whether exposure is voluntary and whether substitution is available. A claim of relational emergence should therefore specify

its boundary: interpersonal dyad, team, role relation, organization, or hybrid configuration. The model's state boundary is an analytic choice with normative consequences.

5.5 Contingency, Opacity, and Practical Commitment

This subsection connects epistemic limits to the practical form of trust. It argues that uncertainty has several sources and that commitment operates within their differentiated structure.

Trust involves exposure to another's discretion, yet uncertainty alone supplies insufficient distinction from gambling, ignorance, or technical risk. The relevant uncertainty concerns an agent or organized role whose response bears practical and often normative significance. Confidence may be high or low. The relation can still include a commitment, invitation, appeal, or expectation addressed to that other.

Three forms of opacity deserve separation. Epistemic opacity concerns limited knowledge of motives, competence, or future conduct. Semantic opacity concerns the plurality of meanings available for an event. Subjective opacity concerns the participant's incomplete access to the organization of personal desire, affect, and repetition. Lacanian theory contributes most directly to the latter two while also cautioning against fantasies of complete epistemic guarantee (Lacan, 1998; Chiesa, 2007; Johnston, 2026).

Practical commitment can organize action across these limits. A person may accept another's promise, disclose under agreed conditions, or delegate with review procedures. Such action expresses more than a probability estimate when it creates or invokes a participant-directed expectation. The addressee can acknowledge the expectation, contest it, fulfill it, or become answerable for a failure. This participant relation explains why betrayal has a distinctive meaning compared with technical malfunction or unsuccessful prediction (Holton, 1994; McLeod, 2023).

Opacity also limits demands for transparency. Continuous access to another's reasons and activity can displace discretion, produce surveillance, and burden the relation. Appropriate trust may coexist with verification, role accountability, and audit. The evaluative issue concerns the distribution and purpose of visibility. Monitoring that protects a vulnerable participant differs from monitoring that secures domination, even when the information collected is similar.

The subject supposed to know helps explain the attraction of complete assurance. Investing an addressee with privileged knowledge can make exposure feel anchored in a coherent order. Acknowledgment of limits can initially feel like loss, yet it may support a relation grounded in bounded competence, negotiated commitment, and revisable expectations. This trajectory is a philosophical possibility and an empirical research question; its developmental evaluation remains specific to each domain.

5.6 Normative Independence and Conditional Value

This subsection preserves the independence of emergence, trust attribution, and ethical evaluation. It develops the reasons that a well-formed trust relation can carry divergent value.

An emergent relation can be causally robust, subjectively meaningful, and ethically harmful. Histories of coercive dependence can create persistent partner-specific patterns. Manipulative lead-

ership can organize disclosure, loyalty, and interpretation. Transferential investment can intensify a bond around asymmetrical authority. These examples satisfy parts of the process definition while raising severe concerns about voluntariness, warrant, distribution, and exit.

Trust itself is a conditional good. Well-placed trust can support coordination, knowledge exchange, care, intimacy, and collective action. Misplaced trust can expose a participant to betrayal or exploitation. Demands for trust can shift risk toward less powerful parties. Warranted distrust can protect agency and register a history of institutional failure. These possibilities support a normative profile whose coordinates remain visible throughout evaluation.

The distinction between trustworthiness and warranted placement is especially important. Trustworthiness concerns features of the potential trustee within a domain, including competence, commitment, responsiveness, and relevant constraints. Warranted placement concerns the trustor's reasons and situation, including available evidence, stakes, alternatives, and vulnerability. A trustworthy person may receive limited trust because the cost of error is high. A person with little effective choice may place trust in a poorly warranted relation. Evaluation should preserve both perspectives.

Relational emergence can also create responsibilities. A participant whose conduct has cultivated dependence or invited vulnerable disclosure may acquire obligations concerning notice, continuity, confidentiality, transition, or repair. Institutions that design roles of care, advice, education, or automated support shape those obligations. Responsibility depends on foreseeability, capacity, role, power, and contribution to the relation; the mere existence of another person's attachment supplies an incomplete basis.

Claim 5.9 (Normative independence). *Evidence that a relational organization has emerged leaves open the attribution of trust, the trustworthiness of its participants, the warrant for placing trust, the justice of its conditions, and the value of preserving it. Each judgment requires an explicit bridge and appropriate evidence.*

The claim protects the inquiry from a common evaluative slide. Stability can be desirable or oppressive. Repair can restore safety or renew harmful dependence. Exit can represent loss or a necessary exercise of agency. A process theory supplies distinctions for these judgments while leaving their normative grounds to ethical and political argument.

5.7 Scope and Revision Conditions

This subsection records the boundaries of the philosophical proposal and the conditions under which revision becomes necessary. It closes the conceptual argument before the mathematical construction begins.

The account is conditional in four senses. Conceptually, rival theories of trust can instantiate the profile differently. Empirically, evidence for history-bearing relational states will vary across populations and domains. Formally, identification results depend on model and probe classes. Normatively, value depends on power, warrant, alternatives, consequences, and institutional responsibility.

Several findings would require substantial revision. Participant-level models may explain prospective trajectories as well as relational-history models across carefully designed comparisons. Event

Table 5: State variables, mathematical roles, and interpretation obligations

State	Mathematical role	Candidate interpretation	Required bridge
z_A, z_B	Participant-level retained state	Belief, affect, capacity, commitment, or strategy	Construct-specific measurement and temporal scale
e	Exposure state	Stake dependent on another's discretion	Feasible actions, alternatives, and counterfactual dependence
m	Relational memory	Persistent effect of typed interaction history	Kernel or update rule plus prospective predictive evidence
s	Symbolic position	Address, supposed knowledge, and guarantee	Interpretive coding and a Lacanian translation argument
u	Context or intervention	Opportunity, institution, monitoring, sanction, or probe	Design description and ethical admissibility
y	Observation	Conduct, report, language, physiology, or outcome	Observation model, error structure, and construct validity

typing may show weak reliability and limited interpretive usefulness. Symbolic-position coding may add little beyond established measures. The profile may fail to distinguish trust from its declared rivals. Cross-cultural work may reveal that its dimensions encode a narrow institutional ideal. Each result would identify a boundary or motivate a redesigned construct.

Metaphysical restraint also remains appropriate. The paper proposes relational emergence as an explanatory status within a research architecture. It leaves open whether the relevant relations ground stronger claims about social ontology. The proposed dynamics operationalize one family of process descriptions. Success would support that family within tested domains; alternative mathematical and philosophical accounts would remain candidates.

The next three sections convert this argument into a formal scaffold. The formal work has a limited task: represent history-bearing states, demonstrate specific identification limits, and derive conditional consequences of memory, rupture, and repair. The equations gain substantive meaning only through the conceptual bridges and empirical obligations established above.

6 History-Bearing Relational Dynamics

This section constructs the temporal core of the framework. It introduces typed event histories, an adaptive state-space model, relational memory, reciprocal feedback, and nonlinear regimes. Table 5 defines the roles of the states before any dynamical consequence is derived.

6.1 Typed Event History

This subsection defines the input to relational memory. The event representation keeps action, outcome, and interpretation distinct.

For a directional relation in domain d , let

$$H_t^{A \rightarrow B, d} = ((\varepsilon_k, a_k^A, a_k^B, o_k, c_k))_{t_k \leq t}, \quad (5)$$

where ε_k assigns a provisional type, a_k^A and a_k^B are participant actions, o_k is an observed outcome, and c_k records context. The type vocabulary includes opportunity, exposure, fulfillment, rupture, acknowledgment, repair, monitoring, refusal, and exit. Typing is an inferential act. A delayed response may count as fulfillment in one practice and rupture in another; qualitative evidence and participant interpretation can therefore alter ε_k while the recorded action remains fixed.

The history can be represented as a marked point process, an ordered event log, or a continuous signal. The choice depends on the temporal resolution of the research domain. Equation (5) serves as a common notation and leaves open whether relations decompose naturally into independent events.

6.2 Adaptive State-Space Scaffold

This subsection states the general model and its assumptions. The scaffold is broad enough to compare candidate mechanisms and narrow enough to expose their dependencies.

Definition 6.1 (Adaptive relational state). *Let*

$$X_t = (z_A(t), z_B(t), e(t), m(t), s(t)). \quad (6)$$

The continuous-time model is

$$dX_t = F_\theta(X_t, u_t) dt + L_\theta(X_t, u_t) dW_t, \quad (7)$$

$$y_t = G_\theta(X_t, u_t) + \epsilon_t, \quad (8)$$

where $\theta \in \Theta$ specifies a model, W_t is a declared stochastic process, and ϵ_t follows a declared observation model.

Discrete and hybrid versions are equally admissible. At event time t_k , a hybrid model may apply

$$X_{t_k^+} = R_{\theta, \varepsilon_k}(X_{t_k^-}, a_k^A, a_k^B, o_k, c_k), \quad (9)$$

followed by continuous evolution between events. This form is useful for rupture and repair because their effects may include an abrupt reclassification and a slower subsequent process.

Assumption 6.2 (Declared model class). *Every formal claim is relative to a stated class Θ , admissible inputs, initial-state family, time horizon, and observation map. Comparisons across model classes require an explicit embedding or translation.*

The assumption prevents a latent coordinate from becoming evidence through its name. A state component labeled m becomes a relational-memory candidate only when its update depends on defensibly typed history and its later effects survive comparison with simpler rivals.

6.3 Relational Memory Operators

This subsection gives three representations of history dependence. Their role is comparative; each makes different regularity assumptions.

A general causal memory operator maps prior typed responses into a current state:

$$m(t) = \mathcal{M}_\eta(H_t^{A \rightarrow B, d}). \quad (10)$$

For an integrable response signal ρ and kernel K_η , a linear-memory family takes the form

$$m(t) = m_0(t) + \int_0^t K_\eta(t, \tau) \rho(\tau) d\tau. \quad (11)$$

The kernel may vary by event type, direction, domain, and context. Its parameters can express decay, persistence, temporal windows, or delayed effects. A sum of exponential kernels admits a finite-dimensional state augmentation. More general kernels can require an infinite-dimensional or approximate representation.

For event-indexed data, the update may be written

$$m_{k+1} = U_\eta(m_k, \varepsilon_k, a_k^A, a_k^B, o_k, c_k). \quad (12)$$

The nonlinear operator U_η can represent asymmetric learning. Fulfillment and rupture can have different magnitudes, time scales, and context dependence. The model leaves those relations to estimation and conceptual interpretation.

A hysteretic representation allows the current state to depend on the path of an input $r_{0:t}$:

$$m(t) = \mathcal{H}_\eta[r_{0:t}](t), \quad (13)$$

where $\mathcal{H}_\eta$ is a causal hysteresis operator (Krasnosel'ski and Pokrovski, 1989). This family becomes relevant if increasing and decreasing evidence follow distinct response paths or if a relation retains effects after the precipitating condition has receded. Hysteresis is an empirical hypothesis here and remains distinct from memory in general.

6.4 Reciprocal Feedback Conditions

This subsection translates the emergence definitions into causal model conditions. It states a mediated loop and identifies its interpretive gap.

Let b and b' be two admissible responses by B to an exposure or address by A . The first link requires

$$\mathcal{L}(m_{t+1} \mid \text{do}(a_t^B = b), H_t) \neq \mathcal{L}(m_{t+1} \mid \text{do}(a_t^B = b'), H_t). \quad (14)$$

For some later horizon $h > 0$, the second link requires

$$\mathcal{L}(a_{t+h}^A \mid \text{do}(m_{t+1} = \mu), H_t) \neq \mathcal{L}(a_{t+h}^A \mid \text{do}(m_{t+1} = \mu'), H_t). \quad (15)$$

The interventions on memory are causal-model queries and may lack a direct experimental implementation. They state the mediation needed for a history-bearing relational account.

Proposition 6.3 (Reciprocal feedback chain). *Suppose Equations (14) and (15) hold, and the relevant differences persist under the declared context and confounder assumptions. Then the model*

contains a causal path from B 's response to relational memory and from that memory to A 's later conduct.

Proof. Equation (14) establishes sensitivity of the mediator's distribution to B 's response. Equation (15) establishes sensitivity of a later action distribution to the mediator. Under the declared causal composition assumptions, the two links form the stated directed path. The proof establishes model structure. A trust interpretation additionally requires the profile and bridge conditions of Section 3. $\square$

The same feedback form can represent intimidation, resentment, conditioned avoidance, or strategic adaptation. Process emergence and semantic typing are therefore complementary obligations.

6.5 Timescale and Directional Asymmetry

This subsection extends the model to asymmetric and multi-timescale relations. It clarifies how reciprocal trust can involve asynchronous states.

Let m^{AB} and m^{BA} denote the two directional memory states. A coupled model can take the form

$$\dot{m}^{AB} = f_{AB}(m^{AB}, m^{BA}, z_A, z_B, e^{AB}, s^{AB}, u), \quad (16)$$

$$\dot{m}^{BA} = f_{BA}(m^{BA}, m^{AB}, z_B, z_A, e^{BA}, s^{BA}, u). \quad (17)$$

Different functions preserve different sensitivities and capacities. One party may update quickly after disclosure while the other updates only after repeated fulfillment. Institutional hierarchy may change exposure and exit for one direction more strongly than for the other.

For multiple timescales, write

$$\dot{m}_f = f(m_f, m_s, X, u), \quad (18)$$

$$\varepsilon \dot{m}_s = g(m_f, m_s, X, u), \quad 0 < \varepsilon \ll 1. \quad (19)$$

The fast state can represent episode-level updating; the slow state can represent an entrenched relational orientation or institutional memory. The separation parameter is estimated or bounded in an application. Its numerical value remains an application-specific empirical quantity.

6.6 Nonlinear Regimes and Hysteretic Possibility

This subsection states a cautious route from nonlinear dynamics to qualitative regimes. It uses general conditions and avoids assigning universal constants to an abstract relation.

Consider a reduced memory coordinate with a context-dependent potential:

$$\dot{m} = -\partial_m V(m; \lambda, u) + \sigma(m, u)\xi(t). \quad (20)$$

Table 6: Probe families, discriminatory value, and relational burden

Probe family	Potential evidential contribution	Principal burden or limit
Repeated conduct	Temporal regularity, adaptation, and prediction	Coercive, habitual, strategic, and trust-based mechanisms can remain equivalent
Participant report	Expectation, interpretation, felt exposure, and address	Demand effects, retrospective reconstruction, and linguistic variation
Ordinary discretion	Response when rules leave a meaningful choice	Contextual risk and unequal stakes require ethical screening
Monitoring variation	Dependence of action on surveillance or sanction	The variation can communicate suspicion and transform the relation
Natural rupture	Response to events arising independently of the study	Weak control, selection effects, and participant burden
Repair process	Attribution, acknowledgment, accountability, and later change	Visible reconciliation can diverge from structural repair
Institutional comparison	Role of alternatives, hierarchy, and governance	Population and measurement invariance may fail

Stable deterministic equilibria satisfy

$$\partial_m V(m^*; \lambda, u) = 0, \quad \partial_m^2 V(m^*; \lambda, u) > 0. \quad (21)$$

If two stable equilibria coexist with an unstable separator, histories can lead to distinct states under the same current context. A transition barrier can be defined symbolically as

$$\Delta V_{i \rightarrow j} = V(m_{ij}^\dagger; \lambda, u) - V(m_i^*; \lambda, u), \quad (22)$$

where $m_{ij}^\dagger$ is an intervening saddle or unstable point. Its value depends on the specified potential and scale. Equations (20) through (22) express a model family. A quantitative law of trust would require construct validation and domain-specific estimation.

Claim 6.4 (Regime interpretation obligation). *A stable branch, basin, or transition in a fitted dynamical system supports a claim about response organization. Calling that organization trust requires independent evidence for exposure, discretion, expectation, normative address, and relational meaning.*

This obligation is central to the paper. Mathematical stability can accompany beneficial trust, exploitative dependence, rigid suspicion, or adaptive refusal. The epistemic question is therefore directed toward mechanism discrimination.

7 Probe-Relative Epistemic Limits

This section determines what can be inferred from observations and interventions within a declared model class. It defines probe equivalence and identification, proves two exact results, and treats measurement as a potentially constitutive event. Table 6 organizes the main probe families.

7.1 Probe Equivalence and Identification Sets

This subsection gives the central epistemic definitions. It treats identification as relative to observations, interventions, and model class.

Let $\mathcal{P}$ be a family of probes. A probe specifies admissible inputs, interventions, observation channels, sampling times, and conditioning information. Model M_θ induces an outcome law $\mathbb{P}_\theta^p(Y)$ for every $p \in \mathcal{P}$.

Definition 7.1 (Probe-relative equivalence). *For $\theta, \theta' \in \Theta$,*

$$\theta \sim_{\mathcal{P}} \theta' \iff \mathbb{P}_\theta^p(Y) = \mathbb{P}_{\theta'}^p(Y) \text{ for every } p \in \mathcal{P}. \quad (23)$$

The compatible class is $[\theta]_{\mathcal{P}} = \{\theta' : \theta' \sim_{\mathcal{P}} \theta\}$.

Definition 7.2 (Trust-property identification set). *For a candidate property $\tau : \Theta \rightarrow \mathcal{V}$, define*

$$\mathcal{I}_\tau(\theta; \mathcal{P}) = \{\tau(\theta') : \theta' \in [\theta]_{\mathcal{P}}\}. \quad (24)$$

The property is identified relative to $\mathcal{P}$ when this set is a singleton, and partially identified when its possible values admit informative bounds or restrictions.

The property τ may be a profile coordinate, a mechanism type, a causal effect, or a qualitative regime. Its definition carries conceptual commitments. The identification set reports what the declared probes distinguish after those commitments have been made.

Proposition 7.3 (Identification criterion). *A property τ is identified relative to $\mathcal{P}$ exactly when it is constant on every probe-equivalence class.*

Proof. If τ is constant on $[\theta]_{\mathcal{P}}$, the image in Equation (24) contains one value. Conversely, a singleton image assigns the same value to every member of the class. The argument applies to each class and proves the equivalence. $\square$

The proposition is definitional and exact. Its modesty is useful: empirical confidence is bounded by the restrictions created by the model class and probe family, and a precisely identified quantity can still have weak construct validity.

7.2 Output-Equivalent Latent Extensions

This subsection proves a broad non-identification construction. It formalizes the insufficiency of cooperation output for unrestricted latent interpretation.

Proposition 7.4 (Output-equivalent extension). *Consider a well-posed state-output model*

$$\dot{x} = f(x, u), \quad y = g(x, u). \quad (25)$$

Form an extended model

$$\dot{x} = f(x, u), \quad \dot{h} = q_\eta(h, x, u), \quad y = g(x, u). \quad (26)$$

For shared x_0 and input u , Equations (25) and (26) generate the same output. Any property that varies with the unrestricted latent state h is unidentified by probes observing only y .

Proof. The x dynamics and initial state are identical. Well-posedness gives the same trajectory $x(t)$ under the same input. The output map is also identical, hence $y(t)$ agrees for every output-only probe. Choose two admissible initial states or functions q_η that yield different values of a property depending on h . Their output laws coincide while their property values differ. The identification set consequently contains more than one value. $\square$

The construction leaves the accessibility of trust open. It shows that adding a hidden state and naming it trust leaves the observed information unchanged. A substantive programme must constrain the latent dynamics, connect them to indicators, and design probes that distinguish relevant rivals.

An immediate application concerns stable cooperation. One model can generate cooperation because B accepts a participant-directed commitment; another can generate the same actions because sanctions dominate the payoff structure; a third can generate them because A attributes exceptional knowledge to B . Output equivalence survives until the design introduces a discriminating context and the bridge assumptions make its response interpretable.

7.3 Intervention Signatures and Probe Refinement

This subsection describes how admissible interventions can narrow compatible models. It then proves the monotonic relation between probe families and identification sets.

For an intervention family $\mathcal{J}$, define the signature

$$\Sigma_{\mathcal{J}}(M_\theta) = \{\mathbb{P}_\theta(Y_{t:t+H} \mid \text{do}(J = j), H_t) : j \in \mathcal{J}\}. \quad (27)$$

The family may vary information, ordinary opportunities, low-risk discretion, monitoring, or a response following a naturally occurring error. The signature is richer than a single score because it records how the trajectory changes across contexts.

Proposition 7.5 (Probe refinement). *If $\mathcal{P} \subseteq \mathcal{P}'$, then*

$$[\theta]_{\mathcal{P}'} \subseteq [\theta]_{\mathcal{P}}, \quad \mathcal{I}_\tau(\theta; \mathcal{P}') \subseteq \mathcal{I}_\tau(\theta; \mathcal{P}). \quad (28)$$

Proof. Agreement under every probe in $\mathcal{P}'$ entails agreement under its subset $\mathcal{P}$. The first inclusion follows. Mapping both compatible sets through τ gives the second inclusion. $\square$

The result establishes potential information gain. Ethical authorization for a probe follows a separate assessment. Additional measurements may burden participants, communicate suspicion, redistribute power, or change the target process.

7.4 Constitutive Measurement

This subsection incorporates the possibility that observation participates in the relation. It replaces an external-observer ideal with probe-indexed dynamics.

Let a probe p enter both the transition and observation maps:

$$dX_t = F_{\theta,p}(X_t, u_t) dt + L_{\theta,p}(X_t, u_t) dW_t, \quad (29)$$

$$y_t = G_{\theta,p}(X_t, u_t) + \epsilon_{t,p}. \quad (30)$$

Questioning someone about trust can invite reflection, defensive presentation, or renegotiation. Surveillance can reduce discretion and alter the meaning of fulfillment. A staged task can create a game-like orientation absent from ordinary interaction. These effects are part of the data-generating process.

Two inferential targets should therefore be distinguished. The first is the relation under ordinary context u . The second is the relation as reorganized through measurement p . Designs can estimate reactivity through varied timing, low-burden sampling, delayed inquiry, or comparison among measurement regimes. The resulting estimate remains conditional on ethical and causal assumptions.

7.5 Epistemic Limit and Lacanian Nonclosure

This subsection relates the formal identification result to the earlier Lacanian analysis. The relation is analogical and constraint-based; the two levels remain distinct.

Probe equivalence states that a declared evidence family leaves several models compatible. Lacanian nonclosure concerns the symbolic impossibility of a final guarantee and the effects of supposing knowledge in an addressee. Both oppose a fantasy of complete warrant, but they operate at different levels. The first is a theorem inside a model architecture; the second is a psychoanalytic and philosophical position concerning subjectivity, knowledge, and address.

Their disciplined conjunction yields a practical rule: a researcher should state both the statistical or structural uncertainty remaining within the model and the interpretive remainder excluded by the model. More data can shrink an identification set, while the symbolic and normative meaning of the relation continues to require participant interpretation and conceptual argument.

8 Rupture, Repair, and Path Dependence

This section analyzes events that can make relational history empirically visible. It proves a prospective separation result, defines a typed rupture and repair map, and distinguishes outcome recovery from relational transformation. Table 7 records the components used in the analysis.

Table 7: Repair components and their separate evidential functions

Component	Relational function	Evidence requirement
Recognition	Registers the event and its significance	Agreement and disagreement concerning the event type and stake
Explanation	Supplies a causal and intentional account	Consistency with available evidence and acknowledgment of uncertainty
Responsibility	Locates accountable agency and role obligations	Feasible control, commitments, and institutional allocation
Restitution	Addresses material or practical loss	Stake-specific recovery and distributional effects
Structural change	Alters conditions that enabled recurrence	Policy, resource, authority, or practice change with follow-up evidence
Relational renegotiation	Revises exposure, discretion, boundaries, or exit	Participant authorization and later trajectory
Time and repetition	Tests persistence beyond a declaration	Longitudinal conduct under relevant opportunities

8.1 Prospective Separation by Memory

This subsection establishes how equal present behavior can coexist with distinct relational states. The result states explicit antecedents and a limited conclusion.

Proposition 8.1 (History-bearing prospective separation). *Suppose two histories yield*

$$y_1(t_*) = y_2(t_*), \quad m_1(t_*) \neq m_2(t_*). \quad (31)$$

Apply a common admissible future context and input. If the flow-to-output map $m(t_) \mapsto y(t_* + h)$ is injective on the two relevant memory states for some $h > 0$, then*

$$y_1(t_* + h) \neq y_2(t_* + h). \quad (32)$$

Proof. The two initial memory states at t_* differ by assumption. Their shared future context defines the same flow-to-output map. Injectivity on the pair maps the distinct inputs to distinct outputs, establishing Equation (32). $\square$

For the kernel model, the antecedent can arise from

$$m_i(t_*) = m_0(t_*) + \int_0^{t_*} K(t_*, \tau) \rho_i(\tau) d\tau, \quad i \in \{1, 2\}, \quad (33)$$

when the two weighted histories differ while their current observation agrees. The proposition demonstrates a logical possibility within a state-space model. Empirical application requires evidence that the memory difference exists and that a later probe is sensitive to it.

8.2 Rupture as a Typed Relational Event

This subsection defines rupture through a mismatch among stake, commitment, expectation, and response. It allows disagreement about event meaning to become part of the state.

Definition 8.2 (Candidate rupture). *A candidate rupture at time t_k is an event for which at least one participant registers a consequential mismatch among an exposed stake, an applicable expectation or commitment, the trustee’s conduct, and the response available afterward. Its record is*

$$\omega_k = (q_k, \kappa_k, a_k^B, o_k, \alpha_k, \ell_k, c_k), \quad (34)$$

where q_k is the stake, κ_k the relevant expectation or commitment, α_k the causal and responsibility attribution, and ℓ_k the loss or relational consequence.

A failed outcome alone may reflect chance under a competent and responsible response. A successful outcome may conceal exploitation or unauthorized risk. The rupture record therefore includes conduct, outcome, attribution, and stake. Participant disagreement can be represented through multiple records ω_k^A , ω_k^B , and an institutional record ω_k^I .

The symbolic state also matters. If B occupied a place of supposed guarantee, an error may reorganize more than a task-level expectation. It may expose the limits of the attributed knowledge, intensify supposition through a revised explanation, or alter the address entirely. Such trajectories are interpretive hypotheses for longitudinal study.

8.3 Repair Operator and Component Vector

This subsection represents repair as a sequence of heterogeneous operations. It avoids treating apology or resumed cooperation as a complete state restoration.

Let the repair process be

$$\mathbf{r}_k = (r_k^{\text{rec}}, r_k^{\text{exp}}, r_k^{\text{resp}}, r_k^{\text{rest}}, r_k^{\text{str}}, r_k^{\text{ren}}, r_k^{\text{time}}), \quad (35)$$

corresponding to recognition, explanation, responsibility, restitution, structural change, relational renegotiation, and temporal follow-through. The hybrid update becomes

$$X_{t_k^+} = R_{\theta, \omega_k}(X_{t_k^-}, \mathbf{r}_k, c_k). \quad (36)$$

Different violation types can respond to different components, consistent with the heterogeneous repair literature (Lewicki and Brinsfield, 2017).

Definition 8.3 (Structural repair). *A repair process is structurally responsive when it changes at least one condition that generated, enabled, concealed, or inequitably allocated the rupture, and when the change persists across a relevant future horizon.*

This definition is stricter than interactional smoothness. Polite exchange, reported forgiveness, or renewed coordination can coexist with unchanged power, resource, and accountability conditions. Conversely, structural repair can proceed while emotional reconciliation remains incomplete.

8.4 Repair Trajectories and State Comparison

This subsection supplies quantities for comparing trajectories while preserving repair's distinction from a universal score. It separates outcome, relation, and institution.

Let d_Y , d_M , and d_I be declared discrepancy functions for task outcome, relational state, and institutional condition. Relative to a reference region $\mathcal{R} = (\mathcal{R}_Y, \mathcal{R}_M, \mathcal{R}_I)$, define

$$D_Y(t) = d_Y(y_t, \mathcal{R}_Y), \quad D_M(t) = d_M(m_t, \mathcal{R}_M), \quad D_I(t) = d_I(i_t, \mathcal{R}_I). \quad (37)$$

The three discrepancies can move differently. Their reference regions require normative and empirical justification; a pre-rupture state may itself contain harmful or unstable conditions.

For each channel $j \in \{Y, M, I\}$, a conditional recovery time is

$$T_j(\epsilon_j) = \inf \{t \geq t_k : D_j(t') \leq \epsilon_j \text{ for all } t' \in [t, t + L_j]\}, \quad (38)$$

where L_j is a persistence window. This quantity is meaningful only for declared metrics and thresholds. It permits outcome recovery to be compared with relational and institutional change while preserving their distinctions.

8.5 Forgiveness, Refusal, and Exit

This subsection places repair alongside several possible participant responses. It resists a teleology in which every relation should return to trust.

Forgiveness can alter blame or resentment while leaving future exposure restricted. Reconciliation can restore interaction while retaining monitoring. Warranted distrust can protect a participant when trustworthiness is weak. Refusal can reject an assigned vulnerability, and exit can terminate the relation when alternatives exist. In constrained institutions, effective exit may require collective or structural change.

These possibilities motivate a branch-valued response map:

$$\mathcal{B}(\omega_k, H_{t_k}, \mathcal{X}) \subseteq \{\text{repair, renegotiation, monitoring, distrust, refusal, exit}\}. \quad (39)$$

The set records feasible and potentially warranted pathways. Normative analysis selects among them using stakes, alternatives, power, history, and participant authorization. Section 9 develops that analysis after an empirical programme is specified.

9 Empirical and Interpretive Programme

This section translates the framework into a staged research programme. It specifies construct development, longitudinal observation, low-risk causal contrasts, interpretive analysis, model comparison, and falsification conditions. Table 8 records the dependency order and the evidence gate at each stage.

Table 8: Staged research programme and evidence gates

Stage	Research role	Principal materials	Advancement gate
1	Construct articulation	Interviews, vignettes, conceptual analysis, participant terminology	Stable domain distinctions and documented ambiguity
2	Measurement mapping	Multi-method indicators for profile coordinates, context, and alternatives	Convergent and discriminant validity within the target population
3	Longitudinal description	Event diaries, interaction traces, reports, and institutional records	Reproducible temporal patterns with attrition analysis
4	Mechanism comparison	Memory-free, strategic, affective, normative, and transferential rival models	Out-of-sample discrimination and sensitivity to model assumptions
5	Low-risk causal contrast	Information, monitoring, ordinary discretion, and response to standardized minor error	Ethical approval, manipulation validity, and bounded participant burden
6	Rupture and repair study	Naturally occurring events and prospective follow-up	Independent event documentation and protections for affected parties
7	Cross-context evaluation	Roles, institutions, languages, and cultures	Documented invariance, calibrated noninvariance, or restricted scope

9.1 Construct Articulation and Domain Sampling

This subsection begins the programme with construct formation. Its objective is to determine how expectation, exposure, discretion, address, and response are expressed within a selected domain.

Research should start from bounded practices such as confidential peer support, collaborative work, professional consultation, or repeated delegation. Each practice defines different stakes and commitments. Semi-structured interviews, critical incidents, participant-generated vignettes, and document analysis can identify local distinctions among trust, reliance, obligation, dependence, loyalty, confidence, and strategic accommodation. Philosophical concepts guide questions; participant language tests their fit.

The resulting codebook should preserve disagreement. If participants contest whether an event constituted betrayal, the data record the rival typings and their reasons. Inter-coder agreement can assess procedural reproducibility, while participant disagreement remains substantive information. Conceptual clarity is served by documenting plural use as well as convergence.

9.2 Measurement Architecture

This subsection connects the trust profile to observable indicators. It uses a multi-method measurement model and gives every indicator a limited role.

For participant i , occasion t , and method r , let

$$y_{itr} = \Lambda_r \eta_{it} + b_{ir} + c_{tr} + \epsilon_{itr}, \quad (40)$$

where η_{it} contains candidate latent dimensions, Λ_r is a method-specific loading map, b_{ir} a participant–

method effect, c_{tr} a context–method effect, and ϵ_{itr} residual variation. The model clarifies that reports, behavior, language, and outcomes can load differently on the target dimensions. Latent-variable methodology supplies tools for this task, together with familiar risks of misspecification (Bollen, 2002).

Expectation p may draw on calibrated predictions and prospective reports. Exposure v requires a stake description and counterfactual alternatives. Discretion δ requires analysis of rules, sanctions, monitoring, and feasible choice. Normative address n may use explanations, participant expectations, reactive responses, and commitment language. History-bearing response r requires longitudinal evidence that earlier typed events alter later conduct or interpretation.

Discriminant validation should compare trust indicators with perceived reliability, attachment, dependency, generalized confidence, social desirability, risk preference, and sanction sensitivity. Convergent validity should be evaluated across methods while allowing method effects. Measurement invariance across time and group is a research question, since the meaning of disclosure or monitoring can vary by role and culture.

9.3 Longitudinal Event Sampling

This subsection designs observation around relational sequences. It prioritizes prospective records over retrospective global scores.

A sampling unit can be a relation–domain pair $(A \rightarrow B, d)$. At baseline, the study records history, alternatives, institutional roles, ordinary monitoring, and the profile coordinates. Repeated sampling records opportunities, exposure, responses, outcomes, interpretations, and changes in feasible action. Event- contingent reports can reduce retrospective compression; periodic interviews can recover meaning and reassessment. Institutional records can document policies, authority, and material outcomes.

The observation schedule should span multiple time scales. Dense sampling near an event can identify episode dynamics. Wider intervals can reveal persistence and delayed reinterpretation. Attrition requires explicit analysis because withdrawal may be related to rupture, burden, or lack of effective exit. The study should retain an ethically appropriate trace of why observation ceased when participants consent to provide it.

9.4 Rival Mechanism Models

This subsection turns conceptual alternatives into comparative models. Its objective is to make trust attribution depend on discrimination in addition to fit.

At minimum, a study should compare the following mechanism families:

1. a memory-free response model depending on current context;
2. a reinforcement or habit model updated by task outcomes;
3. a strategic model sensitive to incentives, sanctions, and monitoring;
4. an affective or attachment-related model with participant-level carryover;

5. a commitment-sensitive model responsive to accepted obligations and participant-directed reasons;
6. a transferential-supposition model sensitive to attributed knowledge and the position of address;
7. a mixed relational model with typed memory and cross-directional feedback.

The candidates can be expressed as restricted instances of Equations (7)–(8). Comparison should include predictive accuracy, calibration, residual structure, parameter stability, and qualitative adequacy. Penalized likelihood, Bayesian comparison, cross-validation, and posterior predictive checks may each contribute under their own assumptions. Selection among statistically close models should retain an equivalence set and suspend selection of a single winner.

9.5 Low-Risk Causal Contrasts

This subsection specifies interventions capable of separating mechanisms while protecting participants. The design emphasizes ordinary variations and minor, repairable perturbations.

One contrast varies monitoring within the range already acceptable in the practice. A purely sanction-sensitive mechanism predicts a larger behavioral change when monitoring changes than a commitment-sensitive mechanism, after relevant confounding is addressed. A second contrast varies whether a trustee receives meaningful discretion. A third varies the explanation and response following a standardized, low-consequence error. A fourth varies information about competence while holding role and incentive conditions stable.

For a response Y and two ethically admissible repair conditions r and r' , a history-conditional causal contrast is

$$\tau_Y(H_t; r, r') = \mathbb{E}[Y_{t:t+H}(r) - Y_{t:t+H}(r') \mid H_t]. \quad (41)$$

Identification requires a defensible assignment or adjustment strategy, consistency, positivity in the relevant history stratum, and an account of interference between linked participants. These assumptions should be stated for each design.

Deliberate betrayal, deprivation, coercion, threatened attachment, and removal of essential support fall outside the default intervention family. Naturally occurring serious ruptures can be studied through consented observation and supportive follow-up; the event itself should remain independent of the researcher's manipulation.

9.6 Interpretive Reconstruction

This subsection gives qualitative interpretation a formal role in mechanism assessment. It examines how participants type events and position one another.

Interviews and discourse records can investigate who is addressed, what knowledge is attributed, which commitment is invoked, and how an outcome is retrospectively narrated. A Lacanian reading may attend to repetition, displacement, demand, idealization, and the addressee's supposed knowledge. Such a reading should present textual evidence, alternative interpretations, and the

analyst’s position in producing the material.

The typed symbolic state in Equation (4) can be linked to a coding distribution that preserves ambiguity among labels:

$$q_t(s) = \mathbb{P}(s_t = s \mid \mathcal{D}_t, \mathcal{C}, \mathcal{A}_{\text{interp}}), \quad (42)$$

where $\mathcal{D}_t$ is the discourse material, $\mathcal{C}$ the codebook, and $\mathcal{A}_{\text{interp}}$ the declared interpretive assumptions. Multiple coders or readings yield a set of distributions. Their divergence can preserve and expose interpretive ambiguity.

9.7 Model Evaluation and Falsification Conditions

This subsection states conditions under which the framework should be revised, narrowed, or abandoned for a domain. It protects the proposal from automatic confirmation.

The history-bearing account loses support if a well-validated memory-free rival matches prospective observations across the relevant horizons and probes. The reciprocal account loses support if one party’s responses fail to update any relationally consequential state. The profile requires revision if its dimensions collapse empirically and conceptually across the target uses, or if participant practices demand additional dimensions. The transferential bridge loses practical value if its indicators add limited interpretive discrimination and limited prospective prediction beyond general attribution models.

The causal interpretation requires revision when unmeasured common causes, interference, selection, or measurement reactivity plausibly explain the estimated links. The cross-context scope should contract when measurement and event meanings vary under weak translation warrants. Finally, evidence that a study burden reorganizes the relation beyond its research purpose should lead to redesign or termination even when the probe promises greater identification.

10 Power, Placement, and Normative Evaluation

This section evaluates the relation after its emergence has been studied. It separates six normative and empirical dimensions, then examines constrained dependence, epistemic injustice, monitoring, warranted distrust, and institutional responsibility. Table 9 provides the audit structure.

10.1 Dimension-Preserving Evaluation Profile

This subsection defines the normative audit and explains why its dimensions remain separate.

For a directional episode, define

$$\mathcal{N}_{A \rightarrow B}^d = (E, W, P, B, J, R). \quad (43)$$

The tuple preserves a multi-dimensional record and leaves the welfare function undefined. Strong emergence evidence E can accompany weak trustworthiness W . A trustworthy person can receive an unwarranted or excessive exposure, yielding weak placement P . A mutually valued relation

Table 9: Dimension-preserving normative profile for relational trust

Code	Dimension	Guiding assessment	Independent evidence
<i>E</i>	Emergence	Strength of history-bearing relational evidence	Longitudinal and mechanism-comparison results
<i>W</i>	Trustworthiness	Capacity and disposition to handle the entrusted stake	Competence, commitment, reasons, integrity, and context
<i>P</i>	Placement	Fit between exposure and available grounds	Evidence, stakes, uncertainty, and feasible safeguards
<i>B</i>	Benefit and harm	Effects on each participant and affected third parties	Material, psychological, relational, and opportunity consequences
<i>J</i>	Justice and power	Distribution of voice, credibility, discretion, burden, alternatives, and remedy	Institutional and social-structural analysis
<i>R</i>	Repair and exit	Availability and quality of correction, renegotiation, refusal, and exit	Procedures, resources, enforcement, and longitudinal follow-up

can still distribute burdens unfairly, affecting *J*. Effective repair and exit can mitigate risk while leaving the other dimensions open.

Aggregation may be required for a concrete decision. In that case, the rule, weights, authority, uncertainty, and distributional effects should be stated. A scalar created for administrative convenience should retain a route back to the underlying dimensions.

10.2 Constrained Dependence and Apparent Voluntariness

This subsection examines relations formed under unequal alternatives. Its aim is to prevent exposure from being read automatically as freely placed trust.

Let $\mathcal{A}_A(c)$ be *A*'s feasible actions in context *c*, including monitoring, refusal, complaint, substitution, and exit. An option can exist in formal policy while carrying prohibitive cost. Define an effective feasible set through a burden bound $\bar{b}_A$:

$$\mathcal{A}_A^{\text{eff}}(c; \bar{b}_A) = \{a \in \mathcal{A}_A(c) : b_A(a, c) \leq \bar{b}_A\}. \quad (44)$$

The burden function can include financial cost, retaliation risk, status loss, care disruption, language access, and emotional or administrative load.

When the effective set is narrow, continued exposure may express necessity more strongly than trust. Organizational and care relations often combine dependence with asymmetrical authority. A complete assessment therefore records who controls alternatives and who bears the cost of testing trustworthiness.

10.3 Epistemic Position and Self-Trust

This subsection analyzes credibility and interpretive authority. It connects relational trust with the social distribution of epistemic standing.

Epistemic injustice theory identifies harms involving credibility and the resources available for understanding experience (Fricker, 2007). These harms can shape trust evidence itself. A person's report of rupture may receive reduced credibility; available institutional language may render the experience difficult to name; a trustee's professional role may amplify supposed knowledge. The observation process then reflects the same power relations under evaluation.

Self-trust concerns a person's practical and epistemic relation to their own judgment and agency. McLeod's work shows its significance for autonomy in a domain of consequential and socially structured choice (McLeod, 2002). In the present framework, deference to B may interact with A 's self-trust. Supportive relations can strengthen reflective agency; dominating relations can displace it. The direction and mechanism need empirical study.

A useful extension adds a self-relation $E_{A \rightarrow A}^{d,I}$ and coupling terms between m^{AA} and m^{AB} . This notation is provisional because interpersonal trust and self-trust have different conceptual structures. Its purpose is to make their interaction available for analysis.

10.4 Monitoring, Discretion, and Accountability

This subsection locates monitoring within the trust profile. It treats monitoring as a heterogeneous institutional practice.

Monitoring can supply accountability, protect vulnerable parties, and make repair possible. It can also communicate suspicion, narrow trustee discretion, or place disproportionate scrutiny on less powerful participants. The relevant question concerns its function, authorization, proportionality, distribution, and effect on the relation.

Let u^{mon} denote a monitoring regime. Its assessment records at least

$$\mathcal{M}(u^{\text{mon}}) = (\text{purpose, scope, visibility, reciprocity, burden, remedy}). \quad (45)$$

Two regimes with equal detection probability can differ normatively across all six dimensions. Their effects on discretion δ , behavior y , symbolic position s , and memory m should be estimated separately.

10.5 Warranted Distrust, Refusal, and Exit

This subsection recognizes protective orientations as legitimate outcomes of relational evaluation. It places them within a broader ecology of agency.

Trust research can acquire a pro-trust bias when greater trust is treated as the desired endpoint. The normative profile supports a wider range. Distrust can be warranted by evidence, experience, or structural risk. Refusal can protect a stake from unauthorized exposure. Monitoring can be proportionate to domain risk. Exit can be appropriate when repair conditions are absent. In collective settings, contestation and institutional redesign may preserve valued relations while changing their governance.

The desirability of trust therefore depends on the object, direction, domain, alternatives, and consequences. A successful intervention may produce more calibrated placement, stronger self-trust,

safer boundaries, or effective exit while reported interpersonal trust decreases.

10.6 Institutional Responsibilities

This subsection reallocates some trust burdens from individuals to governing structures. It identifies responsibilities that make warranted relations more feasible.

Institutions can support competence standards, transparent role commitments, proportionate oversight, protected reporting, independent review, restitution, and accessible exit. They can distribute exposure so that vulnerable parties bear a reduced cost when learning whether a trustee is reliable. They can also maintain records that permit longitudinal accountability while protecting privacy.

Institutional design influences every state in Table 5. Rules shape discretion and exposure; role symbolism shapes supposition; remedy shapes relational memory; resource distribution shapes effective alternatives. The ethical task consequently includes governance of the conditions under which trust is invited, demanded, measured, violated, and repaired.

11 Objections and Boundary Cases

This section tests the framework against six major objections. Each subsection states the objection, offers a bounded response, and records a condition that would require revision.

11.1 Profile Heterogeneity

This subsection considers the objection that the trust profile collects dimensions while leaving a unified concept open. The objection targets both explanatory power and operational tractability.

The profile is intentionally pre-aggregative. Its unity comes from the typed episode in Equation (1): a directional relation involving a stake, another's discretion, expectation, address, and historical response. Different theories specify which dimensions are constitutive. This architecture supports comparison while withholding a premature universal definition.

Revision is required if the dimensions prove unrelated across the intended domains or if the episode structure excludes central cases recognized by participants and defensible philosophical accounts. In that event, the profile should split into several construct families.

11.2 Dynamical Redescription

This subsection addresses the concern that relational emergence merely redescribes ordinary learning. The objection is strongest when the memory state contains only accumulated outcomes.

The framework accepts that some observed relations will be adequately explained by reinforcement, habit, or strategic updating. A relational emergence claim requires event typing, cross-participant response, persistence, and prospective effects beyond a validated memory-free rival. A trust interpretation adds exposure, discretion, and participant-directed meaning.

The account loses distinctiveness if those additions yield limited predictive and interpretive gain. Such a result would support a narrower learning model for the studied domain and limit the present proposal accordingly.

11.3 Psychoanalytic Translation

This subsection addresses the risk that Lacanian concepts become decorative labels or universal explanations. The concern applies especially to the typed symbolic state.

The paper assigns Lacan three bounded roles: distinguishing empirical persons from symbolic positions, analyzing supposed knowledge in transference, and constraining fantasies of complete guarantee. Equation (4) records only these distinctions. Clinical claims and interpretive judgments retain their own evidential standards.

The bridge should be removed from an empirical application if general concepts of authority, idealization, or latent attribution explain the relevant material with equal adequacy and greater clarity. The psychoanalytic layer earns its place through discriminating interpretation or novel, testable process hypotheses.

11.4 Underdetermination and Practical Inquiry

This subsection considers whether probe-relative equivalence makes empirical trust research futile. The objection interprets underdetermination as permanent ignorance.

The identification framework yields graded conclusions. Restricting the model class through theory and validation, adding longitudinal observations, and using ethically admissible contrasts can shrink the identification set by Proposition 7.5. Partial identification, sensitivity analysis, and comparison of mechanism families can support practical decisions while preserving a partial view of the relation.

The framework becomes obstructive if it demands distinctions irrelevant to the decision at hand. Each study should therefore state the resolution required by its purpose. A safety policy may depend on demonstrated reliability and remedy, while a philosophical claim about betrayal requires participant-directed meaning.

11.5 Cultural and Linguistic Scope

This subsection addresses variation in the meaning and value of trust-related practices. It challenges universal event types and measurement scales.

The profile uses formal labels whose empirical meanings can vary. Disclosure, autonomy, discretion, apology, obligation, and relational continuity are shaped by language, kinship, role, institution, and history. Cross-context work should begin with local construct articulation, test measurement invariance, and document untranslatable or contested terms.

A universal scale should be rejected when its score equivalence masks divergent practices. The broader framework can remain useful as a comparison protocol if it records those divergences. It requires deeper revision if its directional episode and profile require systematic distortion to

represent the relations at issue.

11.6 Normative Expansion

This subsection considers whether the six-dimensional normative profile extends the paper beyond trust theory. The objection concerns analytical scope.

Trust relations distribute vulnerability and discretion within social structures. Evaluating only emergence would leave coerced dependence and untrustworthy placement unexamined. The profile keeps these evaluations separate, enabling a study to report E while reserving conclusions about W , P , B , J , and R .

Applications may select only dimensions relevant to their purpose. They should state that selection and its consequences. The paper's claim concerns the need for separation; each normative question can require a distinct model and evidence base.

12 Research Directions

This section converts unresolved assumptions into a research agenda. It groups the agenda into mathematical, empirical, psychoanalytic, comparative, and institutional programmes. Every direction includes an evidence gate.

12.1 Mathematical Development

This subsection identifies formal questions that remain open after the present state-space construction.

Open Problem 12.1 (Minimal memory realization). *Determine conditions under which a typed relational-memory operator admits a finite-dimensional realization that preserves the intervention signatures relevant to trust attribution. Compare realization error across event types and time scales.*

Open Problem 12.2 (Hybrid identifiability). *Characterize structural and practical identifiability for hybrid models with continuous adaptation, discrete rupture and repair maps, partially observed symbolic states, and dyadic interference.*

Open Problem 12.3 (Regime robustness). *Establish when inferred multistability or hysteresis persists across plausible observation maps, model classes, and sampling schedules. A qualitative regime claim should advance only after robustness and construct validation are shown.*

Further work can analyze set-valued symbolic states, nonparametric kernels, networked relations, and stochastic transition paths. Mathematical elegance is secondary to an explicit link between each structure and an empirical or interpretive question.

12.2 Longitudinal and Causal Studies

This subsection identifies the empirical sequence required to test the history-bearing account.

Initial studies should select low-stakes domains with repeated interaction, observable opportunities, meaningful discretion, and feasible participant report. Construct articulation and measurement validation precede mechanism comparison. Prospective studies can then compare memory-free and history-bearing models. Low-risk causal contrasts should follow only after ordinary dynamics and participant burdens are understood.

Evidence for reciprocal emergence requires both links in Equations (14) and (15). Mediation estimates should address time-varying confounding and interference. Evidence for repair requires persistence beyond immediate report and attention to material and institutional conditions.

12.3 Psychoanalytic Discrimination

This subsection states the research burden of the Lacanian contribution. It emphasizes discriminating consequences over terminological inclusion.

One programme can examine relations in which expertise, care, or interpretive authority make supposed knowledge salient. Qualitative analysis can compare changes in address before and after an acknowledged limit, error, or successful interpretation. Candidate hypotheses include transfer of supposition to a new figure, intensified idealization, revised demand, and differentiated trust across domains.

The evidence gate is comparative. A Lacanian account should clarify material that general authority, expectancy, attachment, and strategic models leave unexplained, or it should generate a prospective contrast among those models. Failure at this gate warrants an interpretive-only role or removal from that application.

12.4 Cross-Cultural and Institutional Comparison

This subsection extends the framework across settings while making scope conditions explicit.

Comparative work should examine how institutions distribute discretion, credible commitment, monitoring, remedy, and exit. Linguistic and ethnographic research can identify local concepts that overlap partially with the profile. Multi-group models can test selected measurement relations, while qualitative comparison records differences excluded by invariance tests.

The evidence gate requires documented construct equivalence for each comparison. Where equivalence is limited, results should remain context-specific and the comparison should shift toward differences in relational organization.

12.5 Governance and Design

This subsection translates the normative profile into institutional research. It treats governance as a determinant of trust conditions and remedies.

Interventions can target accessible complaint, independent review, transparent commitments, calibrated oversight, restitution, and protected exit. Evaluation should measure whether the intervention changes effective alternatives, exposure distribution, self-trust, trustee behavior, and repair capacity. Reported trust is one outcome among several.

The evidence gate is distributional. A governance change should be assessed across parties, especially those bearing high stakes or low credibility. An average improvement can conceal concentrated loss or new barriers to refusal.

13 Conclusion

This section consolidates the paper's conditional position and identifies its principal limits. It moves from concept to process, inference, and evaluation.

Relational trust can be studied as a directional, domain-indexed, and history-bearing organization of exposure, expectation, discretion, normative address, and response. The profile developed here preserves philosophical disagreement concerning which dimensions constitute trust. It also distinguishes trust from reliance, cooperation, dependence, confidence, trustworthiness, attachment, and transference.

Lacanian psychoanalysis contributes an analysis of the complete graph of desire, including the signifying chains, address, demand, desire, fantasy, drive, divided subject, supposed knowledge, and incomplete guarantee. Its value lies in showing how an addressee can acquire a privileged symbolic position whose effects exceed actual knowledge, and how exposure can be organized by the subject's response to the Other's enigmatic desire. The formal model retains a selective residue through a typed state and a nonclosure obligation. The larger clinical and theoretical architecture remains available for interpretive work.

The philosophical argument establishes the exact burden carried by the word emergence. Relationally indexed history must contribute to prospective, counterfactual, semantic, or intervention-sensitive explanation beyond declared rivals. Causal historicity concerns how earlier events change later response; semantic historicity concerns how later developments reorganize the relational meaning of earlier acts. The emergence attribution and the trust interpretation therefore remain separate achievements.

The dynamical account gives relational history a precise possible role. Typed events update a memory state; that state can alter later conduct; dyadic responses can form a reciprocal loop; non-linear and hysteretic models can represent path-dependent regimes when data support them. These structures describe possible mechanisms. Conceptual and empirical bridges determine whether a mechanism warrants a trust interpretation.

The identification results impose a disciplined epistemic limit. Cooperation output alone leaves unrestricted latent properties unidentified. Additional probes can narrow compatible models, while measurement itself can transform the relation. Longitudinal and low-risk designs therefore offer a path toward stronger evidence, with complete access to relational meaning remaining an open epistemic limit.

Finally, emergence carries limited normative force. Trustworthiness, warranted placement, benefit, justice, power, repair, and exit require independent assessment. A mature research programme should be capable of recognizing warranted distrust, strengthened boundaries, and institutional redesign as successful outcomes. The proposed framework remains revisable at every bridge: its profile, event types, dynamics, Lacanian interpretation, measurement model, and normative audit

all depend on future philosophical criticism and empirical work.

Acknowledgments

This manuscript was developed through an extended dialogue between the author and ChatGPT (OpenAI). The dialogue supported literature discovery, formal criticism, and editorial development. The author assumes responsibility for the definitions, constructions, interpretations, arguments, selection of material, and remaining errors. The paper also acknowledges the intellectual traditions and authors cited in the verified bibliography, whose work provides the conceptual and technical antecedents engaged here.

DRAFT

References

- Annette Baier. Trust and antitrust. *Ethics*, 96(2):231–260, 1986. doi: 10.1086/292745. URL <https://www.journals.uchicago.edu/doi/10.1086/292745>.
- Joyce Berg, John Dickhaut, and Kevin McCabe. Trust, reciprocity, and social history. *Games and Economic Behavior*, 10(1):122–142, 1995. doi: 10.1006/game.1995.1027. URL <https://www.sciencedirect.com/science/article/pii/S0899825685710275>.
- Kenneth A. Bollen. Latent variables in psychology and the social sciences. *Annual Review of Psychology*, 53:605–634, 2002. doi: 10.1146/annurev.psych.53.100901.135239. URL <https://www.annualreviews.org/content/journals/10.1146/annurev.psych.53.100901.135239>.
- Lorenzo Chiesa. *Subjectivity and Otherness: A Philosophical Reading of Lacan*. MIT Press, Cambridge, MA, 2007. ISBN 9780262532945. URL <https://mitpress.mit.edu/9780262532945/subjectivity-and-otherness/>.
- Alfredo Eidelsztein. *The Graph of Desire: Using the Work of Jacques Lacan*. Routledge, London, 2009. ISBN 9781855756106. URL <https://www.routledge.com/The-Graph-of-Desire-Using-the-Work-of-Jacques-Lacan/Eidelsztein/p/book/9781855756106>.
- Paul Faulkner. *Trust and Cooperation*. Oxford University Press, Oxford, 2025. ISBN 9780198898221. doi: 10.1093/9780191999284.001.0001. URL <https://academic.oup.com/book/59927>.
- Bruce Fink. *Lacan to the Letter: Reading Écrits Closely*. University of Minnesota Press, Minneapolis, 2004. ISBN 9780816643219. URL <https://www.upress.umn.edu/9780816643219/lacan-to-the-letter/>.
- Bruce Fink. *Lacan on Love: An Exploration of Lacan’s Seminar VIII, Transference*. Polity, Cambridge, 2015. ISBN 9781509500505. URL <https://uat.store.wiley.com/en-us/lacan-on-love-an-exploration-of-lacan%27s-seminar-viii-transference-p-9781509500505>.
- Peter Fonagy and Elizabeth Allison. The role of mentalizing and epistemic trust in the therapeutic relationship. *Psychotherapy*, 51(3):372–380, 2014. doi: 10.1037/a0036505. URL <https://discovery.ucl.ac.uk/id/eprint/1428567/>.
- R. Chris Fraley. Attachment stability from infancy to adulthood: Meta-analysis and dynamic modeling of developmental mechanisms. *Personality and Social Psychology Review*, 6(2):123–151, 2002. doi: 10.1207/S15327957PSPR0602_03. URL https://journals.sagepub.com/doi/10.1207/S15327957PSPR0602_03.
- Sigmund Freud. The dynamics of transference. In James Strachey, editor, *The Standard Edition of the Complete Psychological Works of Sigmund Freud, Volume XII*, pages 97–108. Hogarth Press, London, 1958a. URL <https://bgsp.edu/wp-content/uploads/2014/12/Freud-S-The-Dynamics-of-Transference.pdf>. Original work published 1912.
- Sigmund Freud. Observations on transference-love: Further recommendations on the technique of psycho-analysis iii. In James Strachey, editor, *The Standard Edition of the Complete Psychological*

- Works of Sigmund Freud, Volume XII*, pages 159–171. Hogarth Press, London, 1958b. URL https://bsf.spp.asso.fr/index.php?id=97903&lvl=notice_display. Original work published 1915.
- Miranda Fricker. *Epistemic Injustice: Power and the Ethics of Knowing*. Oxford University Press, Oxford, 2007. ISBN 9780198237907. doi: 10.1093/acprof:oso/9780198237907.001.0001. URL <https://academic.oup.com/book/32817>.
- Jack K. Hale and Hüseyin Koçak. *Dynamics and Bifurcations*. Springer, New York, 1991. ISBN 9780387971414. doi: 10.1007/978-1-4612-4426-4. URL <https://link.springer.com/book/10.1007/978-1-4612-4426-4>.
- Russell Hardin. *Trust and Trustworthiness*. Russell Sage Foundation, New York, 2002. ISBN 9780871543417. URL <https://www.russellsage.org/publications/book/trust-and-trustworthiness>.
- Katherine Hawley. Trust, distrust and commitment. *Noûs*, 48(1):1–20, 2014. doi: 10.1111/nous.12000. URL <https://onlinelibrary.wiley.com/doi/10.1111/nous.12000>.
- Richard Holton. Deciding to trust, coming to believe. *Australasian Journal of Philosophy*, 72(1): 63–76, 1994. doi: 10.1080/00048409412345881. URL <https://www.tandfonline.com/doi/10.1080/00048409412345881>.
- Adrian Johnston. Jacques lacan. In Edward N. Zalta and Uri Nodelman, editors, *The Stanford Encyclopedia of Philosophy*. Metaphysics Research Lab, Stanford University, 2026. URL <https://plato.stanford.edu/entries/lacan/>. Substantive revision January 16, 2026.
- Karen Jones. Trust as an affective attitude. *Ethics*, 107(1):4–25, 1996. doi: 10.1086/233694. URL <https://www.journals.uchicago.edu/doi/10.1086/233694>.
- Mark A. Krasnosel’ski and Aleksei V. Pokrovski. *Systems with Hysteresis*. Springer, Berlin, 1989. ISBN 9783642613029. doi: 10.1007/978-3-642-61302-9. URL <https://link.springer.com/book/10.1007/978-3-642-61302-9>.
- Jacques Lacan. *The Four Fundamental Concepts of Psychoanalysis: The Seminar of Jacques Lacan, Book XI*. W. W. Norton, New York, 1998. ISBN 9780393317756. URL <https://wnorton.co.uk/books/9780393317756-the-seminar-of-jacques-lacan-60e41b1b-7115-41dd-97ab-23bfd29d53b2>. Text established by Jacques-Alain Miller.
- Jacques Lacan. The subversion of the subject and the dialectic of desire in the freudian unconscious. In *Écrits: The First Complete Edition in English*, pages 671–702. W. W. Norton, New York, 2006. URL <https://wnorton.co.uk/books/9780393329254-ecrits>.
- Jacques Lacan. *Transference: The Seminar of Jacques Lacan, Book VIII*. Polity, Cambridge, 2015. ISBN 9780745660394. URL <https://www.wiley-vch.de/en/areas-interest/humanities-social-sciences/transference-978-0-7456-6039-4>. Text established by Jacques-Alain Miller.

- Jacques Lacan. *Desire and Its Interpretation: The Seminar of Jacques Lacan, Book VI*. Polity, Cambridge, 2019. ISBN 9781509500277. URL <https://www.wiley-vch.de/en/areas-interest/humanities-social-sciences/psychology-12ps/clinical-psychology-12ps7/psychanalysis-12ps79/desire-and-its-interpretation-978-1-5095-0027-7>. Text established by Jacques-Alain Miller.
- Jacques Lacan. *Formations of the Unconscious: The Seminar of Jacques Lacan, Book V*. Polity, Cambridge, 2020. ISBN 9780745660387. URL <https://uat.store.wiley.com/en-us/formations-of-the-unconscious-the-seminar-of-jacques-lacan-book-v-p-9780745660387>. Text established by Jacques-Alain Miller.
- Roy J. Lewicki and Chad Brinsfield. Trust repair. *Annual Review of Organizational Psychology and Organizational Behavior*, 4:287–313, 2017. doi: 10.1146/annurev-orgpsych-032516-113147. URL <https://www.annualreviews.org/content/journals/10.1146/annurev-orgpsych-032516-113147>.
- Lennart Ljung. *System Identification: Theory for the User*. Prentice Hall, Upper Saddle River, NJ, 2 edition, 1999. ISBN 9780136566953. URL <https://www.rt.isy.liu.se/en/books/sysid/>.
- Niklas Luhmann. *Trust and Power*. Polity, Cambridge, 2017. ISBN 9781509519453. URL <https://www.wiley-vch.de/en/areas-interest/humanities-social-sciences/sociology-12so/general-sociology-12so0/trust-and-power-978-1-5095-1945-3>. Edited by Michael King and Christian Morgner.
- Roger C. Mayer, James H. Davis, and F. David Schoorman. An integrative model of organizational trust. *Academy of Management Review*, 20(3):709–734, 1995. doi: 10.5465/AMR.1995.9508080335. URL <https://journals.aom.org/doi/10.5465/AMR.1995.9508080335>.
- Carolyn McLeod. *Self-Trust and Reproductive Autonomy*. MIT Press, Cambridge, MA, 2002. ISBN 9780262537230. URL <https://mitpress.mit.edu/9780262537230/self-trust-and-reproductive-autonomy/>.
- Carolyn McLeod. Trust. In Edward N. Zalta and Uri Nodelman, editors, *The Stanford Encyclopedia of Philosophy*. Metaphysics Research Lab, Stanford University, fall 2023 edition, 2023. URL <https://plato.stanford.edu/archives/fall12023/entries/trust/>.
- Guido Möllering. The nature of trust: From georg simmel to a theory of expectation, interpretation and suspension. *Sociology*, 35(2):403–420, 2001. doi: 10.1177/S0038038501000190. URL <https://journals.sagepub.com/doi/10.1177/S0038038501000190>.
- Philip Pettit. The cunning of trust. *Philosophy & Public Affairs*, 24(3):202–225, 1995. URL <https://ppettit.scholar.princeton.edu/publications/cunning-trust>.
- Denise M. Rousseau, Sim B. Sitkin, Ronald S. Burt, and Colin Camerer. Not so different after all: A cross-discipline view of trust. *Academy of Management Review*, 23(3):393–404, 1998. doi: 10.5465/AMR.1998.926617. URL <https://scholars.duke.edu/publication/913894>.

Eduardo D. Sontag. *Mathematical Control Theory: Deterministic Finite Dimensional Systems*. Springer, New York, 2 edition, 1998. ISBN 9780387984896. doi: 10.1007/978-1-4612-0577-7. URL <https://link.springer.com/book/10.1007/978-1-4612-0577-7>.

Philippe Van Haute. *Against Adaptation: Lacan's Subversion of the Subject*. Other Press, New York, 2002. ISBN 9781892746658. URL <https://otherpress.com/product/against-adaptation-9781892746658/>.

DRAFT