

Recognition Networks and Value Accessibility: Detection, Constitution, and Future Opportunity

Wanhong HUANG
huangwanhong@serendip.ngo

Abstract

A contribution can remain difficult to evaluate, difficult to translate, or unable to reach the institutions that allocate future opportunities. These conditions are often compressed into the statement that value lacks recognition. This paper proposes a typed account of *recognition accessibility*. It separates standard-relative qualification, favorable evaluation, constituted standing, attribution, transmissible evidence, and opportunity-gate access. Recognition can detect a qualification specified under a declared standard, constitute a social or institutional status, or link both layers in a hybrid mechanism. A route decomposition distinguishes exposure, translation, judgment, and attributable transmission. Under conditionally independent evaluators, exact formulas give network sensitivity, false-positive access, and the marginal effect of another evaluator. A shared route barrier creates a strict accessibility ceiling, which separates nominal evaluator count from effective evaluator diversity. A discrete-time hazard identity represents first recognition over a finite horizon. A directed opportunity graph then defines reachable gates and a recognition cut number. Portable evidence weakly enlarges reachability and improves cut robustness only when it bypasses prior bottlenecks. Finally, a two-model construction shows that a finite recognition trace can have the same distribution under a detection model with an unobserved qualification and a constitution model without that variable. Recognition observations therefore require an explicit value ontology and discriminating evidence. Studies of academic judgment, delayed citation, novelty, and interdisciplinary funding motivate the problem while remaining tied to their own indicators and institutions. The resulting framework is a revisable conceptual model. Empirical use requires calibrated standards, dependence analysis, longitudinal network evidence, rival-mechanism tests, and separate evaluation of accuracy, distribution, participation, contestability, privacy, and institutional dependency.

Keywords: recognition; valuation; evaluator networks; translation; delayed recognition; opportunity; identification.

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. Its definitions, distinctions, and formal constructions remain provisional. Circulation across scholarly and practical communities is part of the purpose of releasing the manuscript at this stage.

The author treats the viewpoints, concepts, and lines of reasoning presented here as contributions to a shared field of inquiry. Similar or related ideas may have appeared in other intellectual, cultural, and disciplinary traditions. The manuscript therefore states its known antecedents, separates the researcher-origin proposal from later formal reconstruction, and leaves historical priority open pending a systematic originality review.

The arguments should be understood as provisional and historically situated. Readers are encouraged to question, test, 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 a related idea is appreciated. Such acknowledgment records an intellectual route; the ideas themselves remain available for criticism, revision, and independent development.

Responsible Use and Rights Reservation

This section separates requested scholarly conduct from the legal permissions stated on the following page. It records an ethical request for responsible use and then defines the narrower scope of retained legal rights.

The author encourages good-faith discussion, criticism, independent inquiry, and responsible use of the material in this work. Separately from the licence's terms, the author asks users to consider foreseeable harms when adapting or applying the proposed framework. This ethical request leaves the licence's permissions and legally authorized uses unchanged.

The author retains the rights preserved under CC BY-NC 4.0 and may pursue remedies to which the author is legally entitled for breach of the licence or violation of the author's independently applicable rights. Reuse remains independent from authorial endorsement. Third-party rights require authorization from their respective holders where applicable. Copyright exceptions and limitations, including applicable forms of fair use or fair dealing, remain fully available.

Notices

This page consolidates the manuscript’s publication status, licence, development disclosure, research-programme relation, and suggested citation.

Status. This working draft records an evolving stage of the author’s position and is circulated for discussion. Definitions, section structure, formal statements, and numbering remain subject to revision. A systematic value-theory review, expanded recognition-theory review, empirical network cases, specialist statistical review, institutional design, and originality audit remain future research stages.

Licence. Except where otherwise indicated, copyright 2026 Wanhong Huang. This work is made available under the Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0). Subject to its terms, the licence permits sharing and adaptation for noncommercial purposes with appropriate attribution, a link to the licence, an indication of changes, and attribution that preserves the licensor’s independence from the reuse. Reuse is governed solely by that licence; the responsible-use request on the preceding page remains separate from its terms. The licence deed and legal-code link are available at <https://creativecommons.org/licenses/by-nc/4.0/>. The licence governs in case of conflict with this summary. Third-party material remains subject to the rights held by its respective rights holders.

Statement on the use of language models. The exploratory discussions and preparation of this paper involved OpenAI’s Codex. Codex supported exploratory dialogue, formal reconstruction, source discovery followed by website verification, exact calculation, argumentative criticism, and drafting in L^AT_EX. The author selected the research questions, directed and approved the theoretical commitments and epistemic status of the claims, and bears sole responsibility for the manuscript, including its definitions, formal constructions, taxonomy, calculations, arguments, conclusions, and errors. Authorship credit remains with the human author. The access level and claim limit for every cited source are recorded in the accompanying literature audit.

Related research programme. This paper is project P020 and the sixth promoted paper in the research-stage *Generative Injustice* programme. P007 studies latent generativity under finite observations. P009 separates realization conditions and standing. P015 develops the value-circulation lifecycle and P016 develops transaction, attribution, and institutional-form registers. The present paper takes responsibility for the recognition-mechanism split, evaluator-network model, translation and portability analysis, delayed-recognition hazard, and observational-equivalence result. Later projects retain responsibility for contaminated evaluation, broad normative judgment, dynamic consent, effective exit, and governance.

Suggested citation. Huang, Wanhong. “Recognition Networks and Value Accessibility: Detection, Constitution, and Future Opportunity.” Working discussion paper, 2026.

1 Introduction

This section establishes the motivating distinction, the paper’s formal question, its restricted position, and the sequence of analysis. It begins with the recognition problem in the wider value-circulation programme, defines recognition accessibility, and states the exact contributions developed below.

A candidate contribution may reach only a few people able to evaluate it. Its form may be illegible across linguistic, disciplinary, cultural, technical, or institutional boundaries. A favorable judgment may remain private, lose its attribution, or fail to produce a record accepted by later gates. Early recognition can also alter status, price, eligibility, attention, and future opportunity. These mechanisms differ even when ordinary language describes all of them as recognition.

Wanhong Huang introduced this problem during a discussion of value circulation and generative injustice. The source discussion considered a contribution with few globally distributed participants able to recognize it and linked credible records of past generativity to later opportunities. A subsequent discussion distinguished value from measured value and proposed delayed recognition, sparse evaluator networks, translation mismatch, and future-access feedback. The present paper preserves the motivating problem while revising its ontology. The phrase *latent value* can suggest an undeclared scalar that exists independently from every evaluator and standard. The formal construction uses typed, standard-relative qualifications where detection is intended and uses institutionally constituted standing where constitution is intended.

Definition 1.1 (Recognition accessibility). Fix a value kind, evaluative standard, eligible evaluator set, evidence format, transmission rule, opportunity-gate set, and horizon. Recognition accessibility is the probability or set-valued reachability with which a candidate contribution can obtain an attributable, transmissible evaluation and reach the declared gates under those conditions.

Definition 1.1 describes access through a recognition system. It assigns neither a universal value level nor a complete welfare ordering. A low-access contribution can qualify under a declared standard, can fall outside that standard, or can acquire a social status only through future recognition. The mechanism must therefore accompany the accessibility claim.

Claim 1.2 (Typed recognition position). Recognition analysis should declare the value kind, standard or constitutive rule, route stages, evaluator dependence, time horizon, evidence format, and opportunity gates. Detection, constitution, and hybrid mechanisms require separate evidence. Accuracy, accessibility, and justice require separate evaluations.

The paper supports Claim 1.2 through five contributions. First, it types candidate qualification, recognition event, constituted standing, attribution, evidence, and opportunity. Second, exact probability identities separate evaluator coverage, false-positive access, and common-mode barriers. Third, a time-expanded graph defines recognition bottlenecks and portable evidence paths. Fourth, a first-event hazard represents delayed recognition. Fifth, a two-model construction establishes observational equivalence between detection and constitution under a finite observable set.

Section 2 positions the model within recognition, epistemic-injustice, valuation, translation, network, and scientific-evaluation traditions. Section 3 defines the typed architecture. Section 4 derives sparse-network coverage and error. Section 5 develops graph reachability and bottlenecks. Section 6 treats time and ontological discrimination. Section 7 connects evidence to future gates. Section 8 states empirical and normative safeguards. Section 9 consolidates the present position.

Table 1: Antecedent traditions and contribution boundaries

Tradition	Licensed role	P020 boundary
Recognition theory	Social and moral consequences of recognition, disrespect, status, and participatory standing [9, 6]	The detection, constitution, and hybrid mechanism audit is a present-project synthesis.
Epistemic injustice	Credibility, prejudice, interpretive resources, silencing, and power in epistemic practice [7]	Recognition accessibility is a wider route diagnostic and requires a separate wrong or justice judgment.
Valuation and evaluation	Categorization, legitimation, evaluative cultures, commensuration, and organized valuation [12, 13, 4]	The paper formalizes route accessibility without reducing evaluation to a universal metric.
Calculative constitution	Market devices participate in making goods calculable and producing market valuations [2]	Market constitution supplies one domain example rather than a general ontology of value.
Translation and boundary objects	Standardization and adaptable shared objects coordinate heterogeneous social worlds [15]	Exposure, translation, attribution, and portability receive separate formal coordinates.
Network routing and diffusion	Bridging ties, mobility opportunity, and probabilistic diffusion depend on network structure [8, 11]	Favorable recognition carries evaluative semantics beyond generic influence.
Scientific recognition	Cumulative advantage, delayed citation, novelty, interdisciplinarity, and evaluation effects [14, 10, 16, 17, 1]	Each finding remains bounded by its indicator, dataset, institution, and horizon.
Measurement criticism	Novelty indicators can conflate constructs and depend on the unit of analysis [5]	P020 treats validation and rival operationalizations as promotion gates.
Generative justice	Circular value flow and generative-justice programme context [3]	Recognition accessibility and all equations are present-project constructions.

2 Antecedent Structure and Contribution Boundary

This section locates the proposed construction within established philosophical, sociological, network, and science-studies traditions. Its objective is to identify the role licensed by each source and the boundary of the present paper’s contribution. Table 1 organizes that comparison.

Recognition theory gives moral and social significance to patterns of respect, disrespect, status, and participation [9, 6]. This literature supplies a major antecedent while also marking a limit: recognition and redistribution can interact, and either term alone leaves the full structure of justice incomplete. Fricker’s account of epistemic injustice identifies credibility and collective interpretive resources as sites where agents can be wronged in epistemic practice [7]. P020 uses these works to motivate attention to power, credibility, and standing. Its graph measures remain functional diagnostics until a separate normative argument is supplied.

The sociology of valuation and evaluation studies categorization, legitimation, heterarchies, criteria, and institutional judgment [12, 13]. Commensuration research shows that conversion into a common metric has cognitive, political, and distributional consequences [4]. Market studies provide a particularly clear constitutive case: devices and organized calculation participate in making goods calculable and producing market values [2]. These traditions support a mechanism split between observing a qualification and producing a social status.

Translation also has institutional form. Star and Griesemer connect standardization and

boundary objects with cooperation across heterogeneous viewpoints [15]. Granovetter links bridging ties with cross-group information and mobility opportunities [8]. Probabilistic diffusion models demonstrate how network structure changes reach [11]. P020 draws a narrower lesson: a recognition route can fail at exposure, translation, evaluation, attribution, transmission, or gate acceptance, and each edge requires its own semantics.

Scientific evaluation supplies bounded empirical illustrations. Merton’s analysis of cumulative advantage places recognition within an unequal social system of science [14]. Large-scale citation studies report a spectrum of delayed recognition [10]. Other studies connect atypical combinations, novelty, long-run citation, field location, or funding success under particular operationalizations [16, 17, 1]. Validation criticism shows that novelty indicators can overlap with interdisciplinarity or depend strongly on construction choices [5]. Citation and funding patterns therefore motivate a recognition question while retaining their status as domain-specific measures.

3 Typed Recognition Architecture

This section defines the entities and mechanism classes required by the formal analysis. Its objective is to keep value qualification, recognition event, social standing, evidence, and opportunity access distinct. Table 2 records the resulting mechanism audit.

Let the node universe at time t be the disjoint union

$$\mathcal{N}_t = \mathcal{I} \sqcup \mathcal{E} \sqcup \mathcal{T} \sqcup \mathcal{K} \sqcup \mathcal{O}, \quad (1)$$

where the components contain candidate items or contributors, evaluators, translators or record keepers, credential nodes, and opportunity gates. For value kind k , evaluative standard ν , item i , and evaluator j , write

$$Q_{ikt}^{(\nu)} \in \mathcal{Q}_{k,\nu}, \quad R_{ijkt}^{(\nu)} \in \{0, 1\}, \quad S_{ikt}^{(\nu)} \in \mathcal{S}_{k,\nu}. \quad (2)$$

The variable Q represents a standard-relative qualification profile when the mechanism contains a detection layer. The event R records an accessible favorable judgment. The variable S records institutionally constituted standing. Indexing by k, ν keeps a local evaluative standard visible.

A detection model specifies a qualification independently from the recognition event:

$$Q_{ikt}^{(\nu)} = q_{k,\nu}(Z_{it}), \quad R_{ijkt}^{(\nu)} \sim \mathcal{O}_{j,k,\nu}(\cdot \mid Q_{ikt}^{(\nu)}, B_t). \quad (3)$$

Here Z supplies evidence and B_t supplies background conditions. The standard ν can remain contested; its explicit presence makes the dispute part of the model.

A constitution model represents social standing as an institutional update:

$$S_{ik,t+1}^{(\nu)} = \Omega_{k,\nu}(S_{ikt}^{(\nu)}, \{R_{ijkt}^{(\nu)}\}_{j \in \mathcal{E}}, I_t). \quad (4)$$

A market price, credential, award, legal status, or prestige position can have this constitutive structure under a specified institution. Describing the update explains status production; legitimacy and justice require additional premises.

A hybrid model preserves both layers:

$$Q \longrightarrow R \longrightarrow S, \quad R_t \sim \mathcal{O}(\cdot \mid Q, B_t), \quad S_{t+1} = \Omega(S_t, R_t, I_t). \quad (5)$$

For example, a contribution can satisfy a declared performance test while its credentialed status and opportunity effects arise through recognition. The arrows in Equation (5) state model dependencies. Empirical causal interpretation remains a separate task.

Table 2: Recognition mechanisms, value objects, and evidence obligations

Mechanism	Value object	Recognition role	Evidence obligation
Detection	Standard-relative qualification or profile	Noisy observation and attributable transmission	Declared standard, construct validity, calibration, and evaluator error
Constitution	Social status, credential, price, legal status, or institutional standing	Creation or update of the modeled status under a rule	Institutional rule, authority, participation, and downstream effect
Hybrid	Qualification plus recognition-mediated standing and opportunity	Observation at one layer and constitution at another	Independent evidence for both layers and the linking mechanism
Unresolved	Value mechanism remains under dispute	Recognition is recorded with open ontology	Rival models, discriminating observations, and explicit uncertainty

Assumption 3.1 (Mechanism declaration). Every application assigns each modeled value kind to detection, constitution, hybrid, or unresolved status and records the evaluative standard, institutional rule, eligible evaluators, evidence format, and horizon.

Assumption 3.1 addresses the central ambiguity in the phrase *unrecognized value*. Under detection, the phrase means low access to a qualification already specified under ν . Under constitution, it can mean an unrealized possibility for acquiring social standing. Under a hybrid model, it names a qualification whose social and opportunity consequences remain inaccessible.

4 Sparse Evaluator Coverage

This section derives recognition accessibility through a single evaluator and then through a sparse evaluator set. Its objective is to distinguish route failure, network sensitivity, false-positive access, marginal coverage, and shared blind spots. The numerical values in Table 3 illustrate the exact formulas under declared parameters.

Let X, T, J, A denote adequate exposure, translation, favorable judgment, and attributable transmission. Conditional on qualification $Q = q$ and background B_t , the probability of an accessible favorable recognition is

$$\begin{aligned}
p_{ijkt}^{(\nu)}(q) &= \Pr(XTJA = 1 \mid Q = q, B_t) \\
&= \Pr(X = 1 \mid Q = q, B_t) \Pr(T = 1 \mid X, Q = q, B_t) \\
&\quad \Pr(J = 1 \mid X, T, Q = q, B_t) \Pr(A = 1 \mid X, T, J, Q = q, B_t).
\end{aligned} \tag{6}$$

Equation (6) is the probability chain rule. It requires no independence premise. A weak factor localizes an access mechanism. It yields no direct conclusion about the other factors or about Q .

For a binary detection illustration, define evaluator sensitivity and false-positive probability as

$$\alpha_{ij} = \Pr(R_{ij} = 1 \mid Q = 1, B), \quad \beta_{ij} = \Pr(R_{ij} = 1 \mid Q = 0, B). \tag{7}$$

Assumption 4.1 (Conditional evaluator independence). Recognition events for eligible evaluators N_i are independent conditional on the binary qualification and declared background B .

Table 3: Exact sparse-network calculation under illustrative parameters

Eligible evaluators n	Independent sensitivity	Shared-route sensitivity	False-positive access
1	0.200000	0.120000	0.020000
2	0.360000	0.216000	0.039600
4	0.590400	0.354240	0.077632
8	0.832228	0.499337	0.149237

Proposition 4.2 (Network coverage and error). *Under Assumption 4.1, the probabilities of at least one accessible favorable recognition are*

$$A_i^+ = 1 - \prod_{j \in N_i} (1 - \alpha_{ij}), \quad A_i^- = 1 - \prod_{j \in N_i} (1 - \beta_{ij}). \quad (8)$$

Adding evaluator ℓ changes these quantities by

$$\Delta_\ell A_i^+ = \alpha_{i\ell} \prod_{j \in N_i} (1 - \alpha_{ij}), \quad \Delta_\ell A_i^- = \beta_{i\ell} \prod_{j \in N_i} (1 - \beta_{ij}). \quad (9)$$

Proof. Conditional independence makes the probability that every evaluator misses a qualified item equal to $\prod_j (1 - \alpha_{ij})$. Taking the complement gives the first identity. Repeating the argument under $Q = 0$ gives the second. Subtracting coverage before and after evaluator ℓ enters gives Equation (9). $\square$

Proposition 4.2 has an institutional implication within the model. Expanding a one-positive recognition rule changes sensitivity and false-positive access together. Evaluation quality therefore requires a decision rule and loss profile in addition to evaluator count.

Table 3 uses homogeneous $\alpha = 0.20$, $\beta = 0.02$, and conditional independence. Its second numerical column adds a shared-route availability of $c = 0.60$. These values are illustrative calculations, not estimates from a target institution.

The shared-route case makes dependence visible. Let $C_i = 1$ mean that a common language, translation, disciplinary, legal, or infrastructural route is available and let $\Pr(C_i = 1) = c_i$. If recognition is inaccessible when $C_i = 0$, then

$$A_i^+ = c_i \left[1 - \prod_{j \in N_i} (1 - \alpha_{ij}) \right] \leq c_i. \quad (10)$$

The route barrier imposes a ceiling even as the evaluator set grows. For two evaluators with marginals p_1, p_2 , the exact identity

$$\Pr(R_1 \cup R_2) = p_1 + p_2 - \Pr(R_1 R_2) \quad (11)$$

shows how positive dependence reduces union coverage relative to the independent calculation with the same marginals. Shared training, standards, prestige priors, language, incentives, and infrastructure can all generate such dependence. Effective diversity therefore concerns error structure and route independence.

5 Translation, Portability, and Bottlenecks

This section moves from event probabilities to institutional pathways. Its objective is to define opportunity reachability, a recognition cut number, and the precise contribution of portable evidence. The analysis uses a time-expanded directed graph so that route timing and gate timing remain visible.

For item i and horizon H , construct $G_i^H = (V_i^H, E_i^H)$. Valid directed edges encode exposure, adequate translation, attributable evidence, credential acceptance, and opportunity-gate transition. Define

$$\mathcal{A}_i(H) = \{o \in \mathcal{O} : \text{a valid time-respecting path from } i \text{ to } o \text{ exists by } H\}. \quad (12)$$

The set is gate-specific and horizon-specific. Informal influence, hidden records, and unobserved routes create missing-edge uncertainty in empirical applications.

When $\mathcal{A}_i(H)$ is nonempty, define the recognition cut number

$$\kappa_i(H) = \min \left\{ |C| : C \subseteq \mathcal{E} \cup \mathcal{T} \cup \mathcal{K}, \mathcal{A}_i^{G_i^H - C}(H) = \emptyset \right\}. \quad (13)$$

A value of one identifies a single evaluator, translator, record keeper, or credential node whose removal closes every declared opportunity path. The quantity diagnoses routing concentration. It assigns no intention or wrong.

Proposition 5.1 (Portable-evidence reachability). *Let G' add valid portable-evidence edges to G while preserving every prior edge. Then*

$$\mathcal{A}_i^G(H) \subseteq \mathcal{A}_i^{G'}(H). \quad (14)$$

The cut number rises only when the added path survives every previous minimum cut.

Proof. Every path in G remains a path in G' , which proves the set inclusion. If a previous minimum cut also intersects the added path, removing that cut still closes every route. A robustness increase therefore requires a path that survives each previous minimum cut. $\square$

Proposition 5.1 distinguishes record existence from robust portability. An internal letter, database entry, contribution history, or credential can be favorable and attributable while remaining accepted only by its originating organization. A genuinely portable record must preserve integrity, interpretation, and acceptance across at least one additional route. The new path can still depend on a common platform, standard, or identity provider, leaving $\kappa_i(H)$ unchanged.

Portability also has costs. A durable record can reveal sensitive activity, compress multidimensional contributions into a metric, enable surveillance, or transfer gatekeeping power to the credential infrastructure. Reachability and institutional desirability therefore remain separate profiles.

6 Temporal Recognition and Ontological Discrimination

This section introduces recognition time and tests the inferential content of a finite recognition trace. Its objective is to represent delayed recognition without treating delay as proof of preexisting value, and to establish an observational-equivalence result across two value mechanisms.

Let T_i be the first time at which accessible favorable recognition occurs. Define the discrete conditional hazard

$$h_i(t) = \Pr(T_i = t \mid T_i \geq t, Q, B_{0:t}). \quad (15)$$

Iterated conditioning gives

$$\Pr(T_i \leq H \mid Q, B_{0:H}) = 1 - \prod_{t=0}^H (1 - h_i(t)). \quad (16)$$

Equation (16) requires no temporal independence premise because each hazard conditions on prior survival and the observed history. Translation capacity, evaluator competence, attention, evidence quality, institutional standards, and gate rules can all change $h_i(t)$.

Citation studies document a continuous spectrum of delayed recognition in science [10]. Work on combinatorial novelty reports long-horizon and cross-field patterns under particular citation measures [17]. These findings show that short horizons can omit later attention. They also preserve several rival explanations for the later event, including improved translation, field migration, cumulative advantage, promotion, new applications, and changed standards. Equation (16) represents timing while leaving causal attribution open.

The same caution applies to value ontology. Consider the observable binary triple (R, S, O) : favorable recognition, constituted standing, and opportunity access. In detection model D , let

$$Q \sim \text{Bernoulli}(\pi), \quad R \mid Q = q \sim \text{Bernoulli}(p_q), \quad S = R, \quad O = R. \quad (17)$$

In constitution model C , omit Q and let

$$R \sim \text{Bernoulli}(\theta), \quad S = R, \quad O = R, \quad \theta = \pi p_1 + (1 - \pi)p_0. \quad (18)$$

Proposition 6.1 (Observable ontology equivalence). *Models D and C in Equations (17) and (18) induce the same probability distribution on (R, S, O) .*

Proof. Marginalizing Q in model D gives $\Pr_D(R = 1) = \pi p_1 + (1 - \pi)p_0 = \theta$. Because $S = O = R$, each model assigns probability θ to $(1, 1, 1)$ and probability $1 - \theta$ to $(0, 0, 0)$. These are the only points in the observable support. $\square$

Proposition 6.1 is an identification result for a restricted observable set. It leaves both models available after any finite sample from that distribution. Discrimination requires information with different model implications: an independently validated measure of Q , exposure or translation intervention, evaluator-family variation, evidence-portability intervention, gate-rule change, or outcomes beyond the recognition trace.

The result also clarifies retrospective language. Later recognition can support a claim that earlier systems lacked access to a contribution later evaluated under standard ν . A stronger claim that the same value existed earlier requires temporal stability of ν , evidence concerning Q , and an account of how the contribution itself changed. A constitutive status can arise only after the relevant institutional act while the materials or capacities supporting it may have an earlier history.

7 Opportunity Access and Institutional Effects

This section connects recognition evidence to future opportunity under explicit gate rules. Its objective is to derive a limited monotonicity result and then state the institutional conditions under which that result loses force.

Let e_{it} be a vector of valid, attributable evidence and let $g_o(e_{it}, B_t) \in \{0, 1\}$ be the eligibility rule at gate o . Define

$$\mathcal{O}_i(e_{it}) = \{o \in \mathcal{O} : g_o(e_{it}, B_t) = 1\}. \quad (19)$$

Assumption 7.1 (Monotone evidence gates). Every gate rule is coordinatewise monotone over valid favorable evidence: $e' \geq e$ implies $g_o(e', B_t) \geq g_o(e, B_t)$.

Proposition 7.2 (Conditional opportunity inclusion). *Under Assumption 7.1, $e' \geq e$ implies*

$$\mathcal{O}_i(e) \subseteq \mathcal{O}_i(e'). \quad (20)$$

Proof. For each $o \in \mathcal{O}_i(e)$, $g_o(e, B_t) = 1$. Monotonicity gives $g_o(e', B_t) = 1$, so $o \in \mathcal{O}_i(e')$. $\square$

Proposition 7.2 formalizes one part of the source insight: credible evidence of past activity can expand future eligibility under monotone gates. The assumption carries substantial content. A credential can close a route when institutions impose exclusivity, conflict rules, stigma, career-track lock-in, incompatible standards, or strategic retaliation. Evidence disclosure can also change privacy, bargaining position, and perceived identity. Applied analysis should therefore estimate gate-specific changes instead of treating recognition as a uniformly positive input.

The scientific literature illustrates several institutional routes. Peer evaluation uses field-specific cultures and deliberative practices [12]. Interdisciplinary proposals can face lower funding success within a studied grant system [1]. Novelty and citation measures show horizon and field dependence [17], while validation studies challenge whether prominent indicators isolate novelty as intended [5]. Together, these works support a route-and-measurement programme. They yield no general ordering of candidate contributions.

Recognition can also reshape later production. A favorable record may yield resources, collaborators, legal permissions, confidence, or protected time. It can also intensify attention costs, metric conformity, agenda steering, or dependency on an evaluator. A future model can represent this feedback as

$$B_{i,t+1} = \Phi(B_{it}, S_{it}, \mathcal{O}_i(e_{it}), U_{it}), \quad Q_{i,t+1} = q_\nu(Z_{i,t+1}; B_{i,t+1}), \quad (21)$$

where B contains realization conditions and U contains other changes. Equation (21) is a research architecture. Longitudinal causal claims require interventions or assumptions capable of separating recognition effects from prior qualification, selection, and time-varying opportunity.

8 Empirical Promotion and Normative Safeguards

This section converts the formal distinctions into a research design and a normative reporting discipline. Its objective is to specify the evidence needed for mechanism claims and the safeguards needed before institutional advice. Table 4 organizes the promotion sequence.

An empirical study should begin with the mechanism declaration in Table 2. Detection studies require an independent measure or validation procedure for Q . Constitution studies require evidence about the institutional rule Ω , the authority that maintains it, and the effects of acquiring the status. Hybrid studies require both sets of evidence and a design for their linking path.

Network studies should observe route stages separately where feasible. A factorial or staged intervention can vary exposure, translation, evaluator family, record portability, and gate acceptance. Negative cases matter: qualified items with high exposure and weak judgment, favorable judgments with lost attribution, portable records without gate acceptance, and opportunity access without later capability expansion each test a different link.

Longitudinal designs should preserve changes in the item, standard, evaluators, institution, and opportunity set. Citation awakening by itself leaves the underlying mechanism open. Comparison across evaluator families can test common blind spots. Translation interventions can test whether accessibility changes while the candidate item remains fixed. Portable-record interventions can test path addition while recording privacy and dependency costs.

Table 4: Recognition-model promotion architecture

Layer	Primary estimand	Required evidence	Principal rival
Qualification	$Q_{ik}^{(\nu)}$ under declared standard	construct validation, alternative standards, measurement error	evaluator judgment used as its own validation
Route access	stage probabilities in Equation (6)	exposure logs, translation tests, attribution and transmission records	hidden route, selective observation, strategic presentation
Network accuracy	A_i^+, A_i^- and dependence	repeated calibration cases, evaluator-family structure, common shocks	correlated error represented as independent coverage
Temporal access	first-recognition hazard and horizon distribution	event history and time-varying standards, attention, and evidence	cumulative advantage, promotion, changed contribution
Opportunity effect	gate-specific reachability and access change	typed edge reconstruction, gate rules, intervention or causal design	prior standing, selection, informal sponsorship
Constitution	update of status S through Ω	institutional rule, authority, contestation, downstream use	detection language applied to a created status
Normative evaluation	accuracy, distribution, participation, contestability, privacy, dependency	affected-party evidence and defended evaluative premises	reachability treated as welfare or justice

The normative report requires at least seven coordinates:

$$\mathbf{N}_{\text{rec}} = \langle \text{accuracy, distribution, participation, contestability, privacy, metric capture, dependency} \rangle. \quad (22)$$

Accuracy concerns the declared detection standard. Distribution records who receives attention and opportunity. Participation records authority over criteria and records. Contestability concerns correction and appeal. Privacy concerns exposure and retention. Metric capture concerns displacement of the underlying activity by the measure. Dependency records new control by evaluators, credential issuers, or platforms.

Research Obligation 8.1 (Recognition-system evaluation). Any institutional proposal to expand recognition accessibility should report network sensitivity and false-positive access, common-mode barriers, value mechanism, gate-specific opportunity effects, and every coordinate in Equation (22).

Obligation 8.1 preserves the paper’s limited inference. Recognition can address credibility exclusion or widen opportunity. It can also concentrate evaluative authority, induce conformity, expose private activity, or create dependency on portable credential infrastructure. The appropriate design depends on the value kind, affected parties, institution, and error costs.

9 Research Obligations and Conclusion

This section consolidates the paper’s conceptual position, exact results, empirical boundary, and future programme. Its objective is to state the current contribution in a form suitable for revision through philosophical analysis, model extension, empirical cases, and institutional criticism.

The central conceptual result is a typed mechanism split. Detection concerns a qualification specified under a declared standard. Constitution concerns a social or institutional status produced through recognition rules. Hybrid models retain both layers and their linking mechanism. The category remains unresolved when available evidence supports several ontologies.

The exact formal results are narrow and useful. The chain-rule factorization separates exposure, translation, judgment, and attributable transmission. Conditional independence gives network sensitivity and false-positive access. A shared route barrier imposes an accessibility ceiling. The discrete hazard gives the horizon distribution of first recognition. Directed reachability and the recognition cut number diagnose opportunity paths and bottlenecks. Portable evidence preserves prior reachability and improves cut robustness only through an independent route. Monotone gates yield conditional opportunity-set inclusion. The two-model construction establishes observational equivalence for the declared recognition trace.

Several obligations remain.

Research Obligation 9.1 (Value-theory extension). Future work should compare realist, constructivist, pragmatist, pluralist, and institutional accounts of value; identify value kinds that resist the current mechanism taxonomy; and examine recognition traditions beyond the bounded antecedent set used here.

Research Obligation 9.2 (Formal extension). Future models should add graded judgments, thresholds, repeated evaluation, correlated and adversarial evaluators, strategic translation, contested standards, dynamic graphs, multiple audiences, privacy constraints, and feedback from opportunity into later qualification.

Research Obligation 9.3 (Empirical mechanism design). Applied studies should predeclare standards, route stages, evaluator families, dependence structure, evidence formats, gates, horizons, rival mechanisms, negative cases, interventions, and missing-network limits.

Research Obligation 9.4 (Institutional and normative evaluation). Institutional recommendations should combine accessibility with accuracy, distribution, participation, contestability, privacy, metric-capture, and dependency evidence under defended premises of standing and justice.

The present position can be stated concisely. A contribution's recognition history depends on a typed evaluative mechanism and a routed institutional network. Sparse evaluators, shared barriers, translation, attribution, portability, time, and gate rules can each change access. Recognition traces alone can leave value ontology unresolved. Careful analysis therefore begins with a declared value kind and mechanism, proceeds through route and error structure, and ends with independent empirical and normative tests. This architecture preserves the motivating concern for inaccessible contributions while keeping its ontological and evidential commitments revisable.

Acknowledgments

The author thanks Ron Eglash for dialogue that helped inspire the wider inquiry into generative justice and value circulation within which this paper was developed. The present definitions, recognition-accessibility construction, formal model, taxonomy, calculations, arguments, conclusions, and errors remain the author's responsibility. This acknowledgment records intellectual inspiration from dialogue.

References

- [1] Lindell Bromham, Russell Dinnage, and Xia Hua. Interdisciplinary research has consistently lower funding success. *Nature*, 534:684–687, 2016.
- [2] Michel Callon and Fabian Muniesa. Economic markets as calculative collective devices. *Organization Studies*, 26(8):1229–1250, 2005.
- [3] Ron Eglash, Kwame P. Robinson, Audrey Bennett, Lionel Robert, and Mathew Garvin. Computational reparations as generative justice: Decolonial transitions to unalienated circular value flow. *Big Data & Society*, 11(1), 2024.
- [4] Wendy Nelson Espeland and Mitchell L. Stevens. Commensuration as a social process. *Annual Review of Sociology*, 24:313–343, 1998.
- [5] Magda Fontana, Martina Iori, Fabio Montobbio, and Roberta Sinatra. New and atypical combinations: An assessment of novelty and interdisciplinarity. *Research Policy*, 49(7):104063, 2020.
- [6] Nancy Fraser. Recognition without ethics? *Theory, Culture & Society*, 18(2–3):21–42, 2001.
- [7] Miranda Fricker. *Epistemic Injustice: Power and the Ethics of Knowing*. Oxford University Press, Oxford, 2007.
- [8] Mark S. Granovetter. The strength of weak ties. *American Journal of Sociology*, 78(6):1360–1380, 1973.
- [9] Axel Honneth. *The Struggle for Recognition: The Moral Grammar of Social Conflicts*. MIT Press, Cambridge, MA, 1996.
- [10] Qing Ke, Emilio Ferrara, Filippo Radicchi, and Alessandro Flammini. Defining and identifying sleeping beauties in science. *Proceedings of the National Academy of Sciences*, 112(24):7426–7431, 2015.
- [11] David Kempe, Jon Kleinberg, and Èva Tardos. Maximizing the spread of influence through a social network. In *Proceedings of the Ninth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, pages 137–146. ACM, 2003.
- [12] Michèle Lamont. *How Professors Think: Inside the Curious World of Academic Judgment*. Harvard University Press, Cambridge, MA, 2009.
- [13] Michèle Lamont. Toward a comparative sociology of valuation and evaluation. *Annual Review of Sociology*, 38:201–221, 2012.
- [14] Robert K. Merton. The matthew effect in science. *Science*, 159(3810):56–63, 1968.
- [15] Susan Leigh Star and James R. Griesemer. Institutional ecology, ‘translations’ and boundary objects: Amateurs and professionals in berkeley’s museum of vertebrate zoology, 1907–39. *Social Studies of Science*, 19(3):387–420, 1989.
- [16] Brian Uzzi, Satyam Mukherjee, Michael Stringer, and Ben Jones. Atypical combinations and scientific impact. *Science*, 342(6157):468–472, 2013.
- [17] Jian Wang, Reinhilde Veugelers, and Paula Stephan. Bias against novelty in science: A cautionary tale for users of bibliometric indicators. *Research Policy*, 46(8):1416–1436, 2017.