

Reason-Type Resolution From Severance-Survival States: Typing an Agent's Relationship Edges Without Asking the Counterparty

Reason-type resolution from survival states is a mechanism disclosed in U.S. Provisional Application No. 64/117,812 by which a persistent semantic agent types each of its relationship edges without consulting any party's declaration. Where an agent weights an incoming conduct evaluation, the weight has to come from somewhere, and the familiar sources are party-supplied: a rating, a score, or the asserting party's own account of its standing. The filed mechanism computes instead, per severance class, a three-valued survival state over recorded lineage entries, then runs an ordered procedure over the pair of those states to yield exactly one of payment-sustained, obligation-sustained, want-sustained, or not-typeable, appending the resolution and its inputs to the agent's own records.

Why an Agent Cannot Ask Who Counts

Where the admission evaluator (120) of a persistent semantic agent (100) produces an accepted determination (122) upon a conduct evaluation artifact (116) from an asserting party (118), a state modifier modifies the scoped integrity vector (106) and the self-

esteem aggregate (108). That modification is not applied at a uniform magnitude. The signed policy object (112) in force carries a weighting per reason-type, so which weighting applies turns on how the edge to the asserting party has been typed.

That typing must be sourced without asking the party being weighted. The application's background describes reputation and trust systems computing a score for an entity from ratings or observations supplied by other entities, the scored entity neither holding the score nor participating in its computation.

Section 2.5 of the filing records a further condition. A party in possession of a plurality of identities not previously encountered by the agent presents those identities as mutually unrelated asserting parties (118), whereby the normalization procedure assigns each to a distinct origin-equivalence class (200) and each contributes an increment.

Recorded structural events supply an input of a different kind. A recorded settlement obligation ceases. A contract record or an enforcement record lapses or is revoked. Whether interaction then continues within a declared continuation interval is itself a recorded fact, and entries of that kind accumulate in the append-only lineage field (104) the agent already keeps. Paragraph [0334] sets out a procedure resolving the reason-type of an edge solely from the pair of severance-survival states computed over those entries.

An Ordered Procedure Over a Pair of Survival States

The unit being typed is an edge: a persisted dyadic relation between the agent (100) and one counterparty, represented by that counterparty's identity record (114) together with the entries of the append-only lineage field (104) recording their interactions.

A severance event is a lineage entry recording a structural termination of interaction capacity, comprising a severance class, a recorded time, and a reference to the evidencing entry. Two classes are recited. A payment class is evidenced by cessation of a recorded settlement obligation; an obligation class is evidenced by lapse or revocation of a contract or enforcement record.

Per class, the agent computes a **severance-survival state** over an observed interval, taking one of three values: **not-tested**, where no severance event of that class is recorded; **survived**, where an interaction entry follows the severance within a declared continuation interval; and **not-survived** otherwise. The state is recited as computed structurally, and never inferred from message content or from a party's declaration.

In accordance with the disclosed embodiment, the agent then resolves a reason-type of an edge solely from the pair of severance-survival states, by an ordered procedure:

- **payment-sustained** where a payment-class severance is recorded and unsurvived;
- **obligation-sustained** where an obligation-class severance is recorded and unsurvived;
- **want-sustained** where severances of both classes are recorded and both survived;
- **not-typeable** where no severance is recorded, or only one class was tested and survived.

An edge can satisfy the first branch and the second at once, and the filing addresses that case. Where both classes are recorded unsurvived, the reason-type resolves under the class whose severance bears the earlier recorded time, ties broken by a declared class precedence, so exactly one reason-type is yielded.

Two further recitations govern the output: the resolution and its inputs are appended to the lineage field (104) and to the counterparty identity record (114), and the reason-type is never declared by the asserting party (118).

Not-typeable also absorbs cases in which the test yields nothing. An edge against which the severance-survival test does not resolve, whether for want of a recorded severance event, for want of a recorded outcome of one, or for want of elapse of the declared continuation interval, is likewise an edge resolving not-typeable. The degradation map (500) carries a matching path: a reason-type-unresolved path applies where the reason-type of an edge cannot be resolved, whereupon the magnitude of modification is bounded to the non-zero minimum declared in the signed policy object (112), the consequence foreclosed being a magnitude of zero. The filing identifies that path as the one exception its abstention invariant admits, and records the outcome so produced as adverse to no party.

Quantities the Filing Declares Rather Than Fixes

For most of what the mechanism consumes, the disclosure recites a role and leaves the value declared elsewhere rather than fixed.

- The **continuation interval**, within which a following interaction entry marks a severance as survived, is a declared interval. No numeric value is stated.
- The **class precedence** breaking a tie between two severances bearing the same recorded time is declared. No ordering is stated.
- The **observed interval** over which the survival states are computed is named at the point of resolution, with no numeric bound stated.
- The **weighting per reason-type** is carried by the signed policy object (112) in force. No weights are stated.
- The **non-zero minimum** is declared, and its role is recited with both conditions intact: where the reason-type is not-typeable and the product of the per-reason-type weighting and the standing multiplier falls below that declared minimum, the effective weighting is raised to the minimum, the floor lying upon the product rather than upon the weighting alone.

A related estimator is disclosed separately. A recorded inter-arrival estimator is computed by the agent (100) over its own append-only lineage field (104) alone, as a declared measure of central tendency of the intervals between successive entries of a named kind recorded against a named edge, origin-equivalence class (200), or action class. Measure and interval count are declared in the signed policy object (112), and below the declared count of recorded intervals the estimator returns a declared default. It supplies the lower bound of the observation windows and register windows used elsewhere in the architecture.

Two counts the disclosure does fix: the two severance classes and the four reason-types. The standing multiplier is likewise built from fixed integers, deriving from three timing-domain statistics taken over the agent's own lineage entries (104) for a counterparty and nothing else: a direction of initiation, a latency to reciprocate, and a regularity of recorded interactions, the intervals from which they are computed counted in successor epochs of the agent's hash chain. Each statistic maps through two declared breakpoints to a component score of zero, one, or two; the three scores sum to an integer standing quantity from zero to six; and a declared non-decreasing map, with a least multiplier above zero and a declared greatest multiplier, yields the multiplier. No cardinal magnitude of benefit conferred or received is computed, solicited, or stored by any step.

Where the Resolution Sits Among the Filed Mechanisms

Section 10 of the filing sets out additional mechanisms, each composing on the persistent semantic agent (100) and the substrate elements disclosed in Sections 1 through 9, and each disclosed as a distinct embodiment that may be practiced independently or in combination with any other. Reason-type resolution appears in Section 10.1, alongside value-scope resolution, provisional restoration, and correction exposure.

Its immediate consumer is reason-type weighting of state movement. Upon an accepted determination (122), a state modifier retrieves the reason-type of the edge to the asserting party (118) from the counterparty identity record (114) and forms an effective weighting as the product of the per-reason-type weighting and a standing multiplier, applying that weighting to the magnitude by which the scoped integrity vector (106) and the self-esteem aggregate (108) are modified. Each operand is appended to the lineage field (104). Where the not-typeable floor applies, the filing records its consequence plainly: an untested edge still moves state, but by less than a severance-tested one.

Class-level designations read the same resolution. An origin-equivalence class (200) every constituent edge of which resolves not-typeable is designated an untested class, the designation resting upon the not-typeable resolution alone and upon no narrower condition. Recomputation of that designation is confined to three triggers: receipt of a conduct evaluation artifact (116) from an asserting party (118) assigned to the class; append of a severance event against a constituent edge, or of an entry carrying such an edge to a survived value; and merge of the class. Where a class is so designated **and** its recorded introduction paths converge upon a common ancestor entry, a declared cost multiplier applies to its contribution. That multiplier neither excludes the class nor suppresses the determinations produced for its artifacts, and a class that later accumulates recorded severance events ceases to be designated untested.

The same values feed two metered paths. The amount by which a renewal raises the authorization quantity, and the amount by which it replenishes the authorization budget (404), are each a monotonically non-decreasing function of the count of recorded severance events across the constituent edges of the renewing class, a class each of whose edges resolves not-typeable renewing at a declared least amount. On the issuing side, a disclosed decrement schedule conditions the decrement applied to the authorization budget (404) upon issuance of a conduct evaluation artifact (116) on the

reason-type of the edge to the receiving party: the greatest amount for not-typeable, a lesser amount for payment-sustained or obligation-sustained, and the least for want-sustained.

Because a reason-type persists as a recorded entry, later evidence gets its own rule. Upon a severance event subsequently recorded against an edge, the agent recomputes the reason-type and, where it resolves differently, appends a superseding-type entry naming the superseded reason-type, the superseding reason-type, and the severance event relied upon. Modifications already applied under the superseded type are neither reversed, recomputed, nor removed, and the superseding type governs only the weighting of a modification whose recorded assertion time is later than the retyping entry.

Earned exposure draws on the same recorded facts. A standing-determination designation written into a counterparty identity record (114) is withdrawn, and the substitution inside the dispatch-authority predicate ceases, upon any of the conditions the filing recites, among them a recorded severance with that counterparty, each withdrawal being appended and incrementing no counter of the counterparty.

Separating This From Reputation, Tie-Strength, and Churn Prior Art

Several established categories address adjacent problems. The comparisons below are structural, drawn from what the filed mechanism consumes and produces, and none characterizes any product, publication, or system as falling within any claim.

Reputation and rating systems. Marketplace ratings, peer endorsement scores, and counterparty-supplied trust levels take a magnitude from parties and aggregate it. Defenses against unfair ratings filter incoming ratings before aggregation to protect the accuracy of the stored score, the filtering party being a disinterested aggregator rather than the rated entity. Role-weighted extensions admit certified references and role-

derived weightings, the roles being exogenous institutional designations asserted by parties other than the evaluated entity rather than quantities derived from that entity's own records of how its relationships terminate. Party-supplied magnitude is what the disclosed mechanism does not admit: the reason-type is never declared by the asserting party (118), and the associated standing computation is recited to compute, solicit, and store no cardinal magnitude of benefit conferred or received.

Tie-strength inference from content. Estimating closeness from message text, sentiment, topical overlap, or learned embeddings is long-standing work. The filed severance-survival state is recited as computed structurally and never inferred from message content or from a party's declaration, so the divergence lies in the admissible input set.

Churn and survival modeling. Statistical survival analysis estimates a hazard or a probability that a relationship will end. The filed output is not a probability. A three-valued state is recorded per severance class over recorded events and a declared continuation interval, and a categorical reason-type follows by an ordered rule with a stated tie-break, so exactly one type results and its inputs stand identified in the lineage field (104).

Entitlement and access-control systems. Contract expiry and credential revocation have long fed permissioning, where the consequence is loss of access. The filing puts the same recorded facts to a different use, asking what the edge did after the severance rather than what the severance permits. Typing an edge neither grants nor removes access.

Transitive trust and introduction graphs. Web-of-trust and vouching schemes derive standing from third-party assertions propagated across a graph. Resolution as described here is performed by the agent (100) over its own lineage field (104) and counterparty identity record (114).

Disclosure Scope

The mechanism described in this article, reason-type resolution from survival states, is disclosed in U.S. Provisional Application No. 64/117,812, at Section 10.1, paragraph [0334], with the antecedent edge, severance-event, and three-valued survival-state recitations at paragraph [0333], and with "reason-type" and "severance event" defined in the terminology section of that application. Related paragraphs cited above appear in the Background and at Sections 2.5, 5.1, 5.2, 10.1, 10.7, and 10.11 of the same application. This article is a technical description prepared for public disclosure and is offered as prior art on the mechanism it describes. It defines no claim, enlarges no claim, and limits no claim. Where this description and the filed application differ, the filed application governs. Adaptive Query is the portfolio under which this and related mechanisms are disclosed.

Deference and Earned Exposure (</earned-exposure>) [All 49 steps → \(/inventive-steps\)](#)

Standing earned through recorded conduct; deference that survives across agents.

Provisional application

PRIMARY TECHNICAL DISCLOSURE

- [Earned Exposure and Deference Records: Standing Built From Recorded Conduct \(/articles/earned-exposure/earned-exposure-and-deference-records\)](/articles/earned-exposure/earned-exposure-and-deference-records)

SECONDARY TECHNICAL

- [The Valuation-Free Ordinal Standing Quantity \(/articles/earned-exposure/valuation-free-ordinal-standing\)](/articles/earned-exposure/valuation-free-ordinal-standing)
- [Determination-Invariance Under an Agent's Own Policy Succession \(/articles/earned-exposure/determination-invariance-policy-succession\)](/articles/earned-exposure/determination-invariance-policy-succession)
- [Elective Exposure Enrollment Without Deference \(/articles/earned-exposure/elective-exposure-without-deference\)](/articles/earned-exposure/elective-exposure-without-deference)

- [Interventional Attribution by Receipt-Path Control \(/articles/earned-exposure/interventional-attribution-receipt-path\)](/articles/earned-exposure/interventional-attribution-receipt-path).
- [The Portable Exoneration Record \(/articles/earned-exposure/portable-exoneration-record\)](/articles/earned-exposure/portable-exoneration-record).
- [Attribution, Exoneration, and the Domain Baseline: An Ordered Branch Over the Latency Differential \(/articles/earned-exposure/attribution-versus-exoneration-branch-domain-baseline\)](/articles/earned-exposure/attribution-versus-exoneration-branch-domain-baseline)
- [Bounded Count of Dispatches Per Deference Record: Capping How Many Executions One Counter-Signed Adopted Determination Authorizes \(/articles/earned-exposure/bounded-count-dispatches-deference-record\)](/articles/earned-exposure/bounded-count-dispatches-deference-record)
- [Coarse Lineage-Segment Granularity: Verifying a Tested-Entry Enumeration Without Disclosing Which Lineage Entries Were Tested \(/articles/earned-exposure/coarse-lineage-segment-granularity-tested-entry\)](/articles/earned-exposure/coarse-lineage-segment-granularity-tested-entry)
- [Correction-Exposure Decay: An Authorization Quantity That Depletes With Agent Operation and Renews Only on Recorded External Evaluation \(/articles/earned-exposure/correction-exposure-decay-authorization-quantity\)](/articles/earned-exposure/correction-exposure-decay-authorization-quantity)
- [Cause-Keyed Gate Restoration: A Distinct Return Path for Decay-Induced Withholding of Agent Authorization \(/articles/earned-exposure/distinct-return-path-decay-induced-withholding\)](/articles/earned-exposure/distinct-return-path-decay-induced-withholding)
- [Edge Severance Events and the Three-Valued Survival State: Resolving Whether a Counterparty Relationship Outlived a Payment-Class or Obligation-Class Termination \(/articles/earned-exposure/edge-severance-events-three-valued-survival\)](/articles/earned-exposure/edge-severance-events-three-valued-survival)
- [Emitting the Deference Correction Linkage Record to the Followed Agent: Reporting a Downstream Correction Without Producing a Rating \(/articles/earned-exposure/emission-deference-correction-linkage-record-followed\)](/articles/earned-exposure/emission-deference-correction-linkage-record-followed)
- [The No-Address Omission Branch: What a Deferring Agent Records When an Exposure Dispatch Reaches Nobody \(/articles/earned-exposure/exposure-dispatch-no-address-omission-branch\)](/articles/earned-exposure/exposure-dispatch-no-address-omission-branch)
- [Channel-Baseline Normalization: Taking Channel Overhead Out of the Latency Differential \(/articles/earned-exposure/latency-differential-channel-baseline-normalization\)](/articles/earned-exposure/latency-differential-channel-baseline-normalization).
- **[Reason-Type Resolution From Severance-Survival States: Typing an Agent's Relationship Edges Without Asking the Counterparty \(/articles/earned-exposure/reason-type-resolution-survival-states\)](/articles/earned-exposure/reason-type-resolution-survival-states)**
- [Reason-Type Retyping by a Superseding-Type Entry: Recomputing an Edge's Reason-Type on Later Severance Evidence Without Disturbing Modifications Already Applied \(/articles/earned-exposure/reason-type-retyping-superseding-type-entry\)](/articles/earned-exposure/reason-type-retyping-superseding-type-entry).
- [Renewal-Side Replenishment of the Authorization Budget: Restoring an Agent's Metered Spending Capacity Only on Exposure to an Uncounted Origin-Equivalence Class \(/articles/earned-exposure/renewal-side-replenishment-authorization-budget\)](/articles/earned-exposure/renewal-side-replenishment-authorization-budget)
- [Following Does Not Count as Being Tested: Retention of the Short Decay Constant When an Agent Defers, and the Action Class That Stays Untested \(/articles/earned-exposure/retention-short-decay-constant-deference-class\)](/articles/earned-exposure/retention-short-decay-constant-deference-class)

- [Standing-Determination Designation: Substituting a Verified Counterparty Determination for One Conjunct of the Dispatch-Authority Predicate \(/articles/earned-exposure/standing-determination-designation-substitution-inside-dispatch\)](/articles/earned-exposure/standing-determination-designation-substitution-inside-dispatch).
- [Uncounted-Class Renewal: Gating Agent Authorization on a Windowed Register of Origin-Equivalence Classes \(/articles/earned-exposure/uncounted-class-renewal-gated-windowed-register\)](/articles/earned-exposure/uncounted-class-renewal-gated-windowed-register).

APPLICATIONS • GENERAL

- [Vendor Qualification Without Ratings: Standing Earned From Recorded Conduct \(/articles/earned-exposure/vendor-qualification-without-ratings\)](/articles/earned-exposure/vendor-qualification-without-ratings).
- [Credentialing Autonomous Practitioners: Deference That Survives Across Agents \(/articles/earned-exposure/professional-credentialing-agents\)](/articles/earned-exposure/professional-credentialing-agents).

APPLICATIONS • SPECIFIC

- [Marketplace Seller Reputation Systems: Presented Scores Versus Earned Admissibility \(/articles/earned-exposure/marketplace-seller-reputation\)](/articles/earned-exposure/marketplace-seller-reputation).

TERMINOLOGY

- [counterparty identity record \(/glossary#counterparty-identity-record\)](/glossary#counterparty-identity-record).
- [deference record \(/glossary#deference-record\)](/glossary#deference-record).
- [edge \(/glossary#edge\)](/glossary#edge).
- [reason-type \(/glossary#reason-type\)](/glossary#reason-type).
- [severance event \(/glossary#severance-event\)](/glossary#severance-event).
- [standing quantity \(/glossary#standing-quantity\)](/glossary#standing-quantity).
- [untested class \(/glossary#untested-class\)](/glossary#untested-class).

[Deference and Earned Exposure overview → \(/earned-exposure\)](/earned-exposure).