



Identity as a Multi-Dimensional Value System: Towards a Formal Model of Identity Economies

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Abstract

This article develops a formal model of identity as a multi-dimensional system of value. Contemporary social theory has examined identity through recognition, capital, redistribution, narrative and justification, and this article brings selected insights into a jointly specified account of how heterogeneous forms of value are structured, allocated and transformed. Building on Identity Group Theory (IGT), the article proposes four analytically distinct value domains within identity economies: Psychic value (Ψ), Reciprocal resources and obligations (R), Renown (N), and Monetary value (M). The study is theoretical and model-building rather than empirical. It synthesises established approaches to recognition, capital and justification and specifies a formal architecture in which an actor's position is represented as a value vector. Actions produce expected changes across the four dimensions; actors evaluate these changes under identity-dependent weights, risk and a constrained feasible set. Conversion functions describe movement between value dimensions, while conversion constraints capture normative and institutional friction. The model further specifies asymmetric conversion, feedback loops, path dependence and threshold effects. Its principal result is a framework in which inequality can arise not only from unequal endowments, but also from unequal access to conversion pathways and differential exposure to instability. The model integrates symbolic, relational, psychic and material processes without presuming a universal common metric and provides a basis for future empirical operationalisation and testing.

Keywords: Identity Group Theory; value theory; recognition; social inequality; reciprocity

1 Introduction

Identity is a central organising concept in contemporary social theory. It is invoked to explain recognition, belonging, conflict, differentiation and the relation between persons and social orders. Yet the theoretical status of identity remains fragmented. Recognition theory explains struggles for esteem and respect (Honneth, 1992/1995); Bourdieu's account of capital explains unequal distributions and conversions of resources (Bourdieu, 1986); Fraser's work connects recognition and redistribution (Fraser, 1997); and Boltanski and Thévenot analyse plural orders through which actors justify claims to worth (Boltanski & Thévenot, 1991/2006). These

traditions illuminate important dimensions of social value, and the present model brings selected mechanisms into an explicit, jointly specified architecture.

Identity Group Theory (IGT) connects identity, social regulation and the allocation of heterogeneous resources (Barker-Ciganik, 2024). The present article develops a conditional application of that framework. An identity economy denotes a recurrent configuration in which evidenced groupness and membership-linked rules shape allocation across distinct value domains. A category label alone is insufficient: recurring membership expectations, identifiable allocators and consequential allocation practices must be established. Within such configurations, the model distinguishes Psychic value (Ψ), Reciprocal resources and obligations (R), Renown (N), and Monetary value (M). These are domains within an identity economy, rather than four separate groups or universally functioning markets.

The contribution is theoretical rather than empirical. The purpose is to specify a parsimonious formal vocabulary that makes several mechanisms analytically explicit: multidimensional positioning, identity-dependent evaluation, constrained action, asymmetric conversion, feedback and threshold instability. The model does not claim that all social value is directly measurable or mutually commensurable. Its purpose is instead to identify distinct dimensions and relations that can subsequently be operationalised in particular empirical settings.

This approach also clarifies the relationship between IGT and identity economics. Akerlof and Kranton (2010) demonstrate how identity and social norms enter economic choice. The present model reverses the direction of emphasis: monetary value is treated as one dimension within a broader identity-mediated system of value. Economic resources therefore remain important, but they are analysed alongside relational, reputational and psychic forms of value.

2. Theoretical Framework and Model-Building Method

2.1 Theoretical Foundations

The model is developed through theoretical synthesis and formal specification. It draws selectively on four established strands of social theory. First, recognition theory identifies esteem and respect as socially consequential goods (Honneth, 1992/1995). Second, Bourdieu's account of economic, cultural, social and symbolic capital establishes that advantages can accumulate and be converted across domains (Bourdieu, 1986). Third, Fraser's analysis of recognition and redistribution demonstrates that symbolic and material inequalities cannot be adequately understood in isolation (Fraser, 1997). Fourth, economies-of-worth theory shows that actors justify claims through plural evaluative orders rather than a single universal scale (Boltanski & Thévenot, 1991/2006).

The formalisation proceeds by retaining three shared insights while avoiding a reduction of one tradition to another. Value is plural; access to value is socially structured; and movement between domains is consequential. The model then asks what minimum set of variables is required to represent these insights within IGT. The four dimensions proposed below are therefore analytical constructs. They are not asserted to be exhaustive, and their empirical indicators may vary by context.

The model also draws on work that treats identity as narratively and relationally constituted. Narrative approaches emphasise that identities acquire coherence through temporally organised self-understandings (Ricoeur, 1990/1992; Somers, 1994), while Butler's account of subjection highlights the psychic effects of social power (Butler, 1997). These insights inform the treatment of Psychic value as socially constituted rather than as a purely private psychological stock.

2.2 Empirical and Methodological Developments

Recent network research makes the proposed links between relational and monetary domains more specific. Chetty et al. (2022) distinguish economic connectedness, network cohesion and civic engagement; their associations with upward mobility differ. This supports separating network measures rather than treating social capital as a single stock, but does not establish reciprocal claims or individual-level conversion. Rajkumar et al. (2022) use randomised changes to LinkedIn connection recommendations to test effects on job mobility. Their nonlinear, context-dependent findings motivate directional and bounded conversion hypotheses. Neither study directly validates the four-domain architecture or establishes an identity economy in the present sense.

Methodological research clarifies what testing would require. Flake and Fried (2020) argue for transparent construct definitions and measurement decisions, which are essential when distinguishing Ψ from affect, R from network size and N from visibility. Rohrer and Murayama (2023) show that separating within-person and between-person associations does not itself identify causal effects. Consequently, longitudinal covariance among domains must be combined with a stated causal question, temporal ordering and evidence about the proposed allocation or conversion mechanism.

2 3. Four Value Domains within Identity Economies

3.1 Psychic Value (Ψ)

Psychic value denotes valued experience of meaning, coherence or continuity in an identity position. Ψ represents this experiential dimension, not a stock of psychological energy or an undifferentiated capacity for action. Psychic resources, such as perceived efficacy, may help sustain participation, while effort and distress describe expenditures or burdens. Their relationships with Ψ require separate measurement. Narrative and relational accounts inform this socially constituted understanding of psychic value (Butler, 1997; Ricoeur, 1990/1992). No universal cardinal scale of Ψ is assumed.

3.2 Reciprocal Resources and Obligations (R)

Reciprocity is a relational mechanism linking provision or contribution to expectations of return. R denotes the resources and obligations organised through that mechanism: recognised claims, access to support and obligations owed. These components should normally be recorded separately because a net balance can conceal dependence or unequal burdens. A single R score is a context-specific summary requiring an explicit aggregation rule. Network size and trust alone do not establish usable claims, and care need not be reciprocal.

3.3 Renown (N)

Renown denotes audience-attributed reputation, esteem or evaluative standing within a specified domain. It connects with symbolic capital and recognition theory without encompassing every form of recognition (Bourdieu, 1986; Honneth, 1992/1995). Acknowledgement of membership or rights can affect access without conferring prestige, while visibility can coexist with disrepute. N therefore requires a specified audience and an indicator of evaluative standing; visibility, institutional authority and self-esteem should be measured separately.

2.1.3.4 Monetary Value (M)

Monetary value refers to income, wealth and economically transferable resources. It is the most standardised of the four dimensions, but it is not autonomous. Money can support reciprocal

obligations, purchase visibility or buffer threats to psychic stability; conversely, identity norms can regulate whether particular monetary acquisitions or conversions are regarded as legitimate.

3.5 Identity as a Value Vector

At time t , actor i can be represented by a state vector containing the four value dimensions:

$$E_{i,t} = (\Psi_{i,t}, R_{i,t}, N_{i,t}, M_{i,t}) \quad (1)$$

The vector is a representation of configuration, not a claim that the dimensions share a common unit. The four components remain analytically non-reducible. High M cannot automatically compensate for a collapse of Ψ ; high N cannot necessarily replace absent reciprocal support. This non-reducibility is central because it generates trade-offs rather than a single hierarchy of outcomes.

4. Formal Specification and Decision Structure

An action a available to actor i produces an expected change in the actor's value position:

$$\Delta E_{i,t}(a) = (\Delta\Psi, \Delta R, \Delta N, \Delta M) \quad (2)$$

Actors need not value each dimension equally. Let the weighting vector be:

$$w_{i,t} = (w\Psi, wR, wN, wM) \quad (3)$$

The weights are valuation weights: they represent the importance assigned to outcomes in this particular decision model. They are distinct from identity centrality, situational activation and allocation-based salience. Narratives, obligations, social position and prior experience may influence them. To use a weighted sum, each outcome must first be expressed on a declared, locally interpretable scale; weights then depend on those scale choices. With ΔE understood in these scaled units, an optional first approximation is:

$$V(a) = w_{i,t} \cdot \Delta E_{i,t}(a) - \rho(a) \quad (4)$$

Here $\rho(a)$ represents residual expected cost or a risk penalty expressed in decision-index units. Costs already included in ΔE must not be deducted again. Equation 4 imposes local additive comparability and permits compensation between included outcomes. It does not establish a universal common unit. Where an identity commitment is non-compensatory, it must instead be represented by an admissibility restriction or a different decision rule.

Let $A_{i,t}$ denote actions that are practically feasible and meet any explicitly specified non-compensatory restrictions. Institutional access, available resources and gatekeeping shape practical feasibility; an actor's refusal to violate a commitment is a distinct restriction that should be recorded separately. A conditional maximising version of the local model is:

$$a^* = \arg \max_{a \in A_{i,t}} [w_{i,t} \cdot \Delta E_{i,t}(a) - \rho(a)] \quad (5)$$

Equation 5 assumes that the actor ranks admissible actions using the index in Equation 4 and selects a highest-ranked option. This is a scoped modelling assumption, not an axiom of IGT or evidence of perfect information. Habit, coercion, satisficing and non-reciprocal care remain possible explanations of conduct. The model's sociological implication is that actors can differ in available actions and conversion opportunities even when their expressed valuations are similar.

5. Conversion Dynamics, Asymmetry and Inequality

Social advantage frequently depends on transforming one form of value into another. Economic resources may generate visibility; recognised expertise may produce income; reciprocal networks may provide access to opportunities. For value dimensions v_j and v_k , conversion can be represented as:

$$\Delta v_k = f_{jk}(\Delta v_j) \quad (6)$$

A central proposition is that conversion is generally asymmetric:

$$f_{jk} \text{ and } f_{kj} \text{ need not be inverse mappings} \quad (7)$$

For example, money may be converted into visibility through sponsorship or patronage, while recognition does not necessarily yield a comparable monetary return. Reciprocity may generate renown through loyalty and collective support, whereas overt attempts to monetise reciprocal relations may damage the relationship itself. This extends Bourdieu's insight that forms of capital can be transformed by making the direction, friction and possible failure of conversion explicit (Bourdieu, 1986).

Let $C_{jk} \in [0,1]$ represent effective access to a specified conversion pathway. It is a reduced-form constraint term; empirical work should distinguish formal permission, audience legitimacy and practical access rather than treating them as interchangeable observations:

$$\Delta v_k = f_{jk}(\Delta v_j) C_{jk} \quad (8)$$

When C_{jk} approaches zero, a conversion pathway is blocked; intermediate values represent friction. The constraint is not merely technical. Identity narratives and institutions define which exchanges are honourable, corrupt, inappropriate or impossible. A gift may increase reciprocity in one context and be interpreted as bribery in another. The same transfer of M can therefore have different consequences for R and N depending on the normative structure of the identity economy.

This yields a distinct account of inequality. Actors differ not only in their initial endowments $E_{i,t}$ but also in access to effective conversion pathways. An actor with substantial local renown may be unable to translate it into economic security, while an actor with high monetary resources may have several routes to visibility, network access and insulation from shocks. Inequality can therefore be reproduced through conversion bottlenecks even when no single dimension is completely closed.

6. Thresholds, Feedback and Instability

Identity economies need not change smoothly. A decline in one domain may have disproportionate consequences elsewhere. For psychic value, the proposed mechanism is that loss of experienced coherence changes later participation or access to support; impaired psychological capacity cannot simply be inferred from a low Ψ score. Let Ψ_{crit} denote a context-specific candidate threshold, and let I denote a separately observed disruption of participation or support:

$$\Psi_{i,t} < \Psi_{crit} \Rightarrow \text{hypothesised increase in } P(I_{i,t+1} = 1) \quad (9)$$

Equation 9 states a hypothesis about the probability of subsequent disruption, not a deterministic definition of collapse. Ψ_{crit} must be specified or estimated and tested against a model without a threshold. Ψ is not universally prior to other domains, which may also show nonlinear effects. Loss of standing may restrict opportunities, and loss of usable support may disrupt collective activity. These mechanisms require independent evidence.

Feedback loops amplify these effects. A positive loop may take the form $N \uparrow \rightarrow M \uparrow \rightarrow N \uparrow$, where recognition creates opportunities that further increase recognition. A negative loop may take the form $\Psi \downarrow \rightarrow R \downarrow \rightarrow N \downarrow \rightarrow \Psi \downarrow$. Such recursive processes create path dependence: small initial differences or shocks can produce increasingly divergent trajectories.

Collapse, in this model, means loss of a stable configuration across dimensions rather than disappearance of all value. An actor may retain substantial M while experiencing severe losses in Ψ , R and N. Reconfiguration can follow as the actor changes priorities, enters new networks or adopts a different identity narrative. The model therefore treats identity transformation as a possible restructuring of both value positions and the weights assigned to them.

Several conceptual distinctions are important for interpreting the model. First, value position is not identical to identity content. The vector $E_{i,t}$ represents resources and standing associated with participation, whereas identity narratives specify the meanings, obligations and evaluative rules through which those resources become intelligible. Two actors could therefore occupy superficially similar value positions while understanding them through different narratives. Conversely, actors sharing an identity category may occupy sharply unequal positions within its economies. This distinction prevents the model from treating groups as homogeneous containers and keeps attention on within-group hierarchy as well as between-group difference.

Second, allocation and conversion should be distinguished. Allocation concerns the distribution of value to actors or positions; conversion concerns the transformation of value already possessed or accessible. Institutions can shape both processes. A professional credential, for example, may allocate eligibility directly and, if an audience values it, increase Renown; hiring practices may then link that standing to Monetary value. A discriminatory rule can operate in the opposite direction by reducing initial allocation, restricting the feasible set, or lowering the effective conversion coefficient. The framework therefore permits different mechanisms to generate similar observed inequalities.

Third, the model distinguishes conversion from simple correlation. If M and N rise together, that does not establish that one has been converted into the other. A conversion claim requires a mechanism linking the change in one dimension to a change in another, together with evidence that the pathway is available to the actor in the relevant institutional context. This requirement is important for empirical testing because it prevents the conversion matrix from becoming a metaphor for any association among outcomes.

Fourth, the constraint term C_{jk} can represent both formal rules and informal legitimacy. Legal restrictions, professional licensing, organisational gatekeeping and property rights can block or facilitate conversions institutionally. Norms can do the same without formal enforcement. The monetisation of care, friendship, religious authority or political loyalty may be accepted in some settings and regarded as corrupting in others. Boltanski and Thévenot's (1991/2006) account of plural orders of worth is especially relevant here because the acceptability of a conversion depends on the evaluative principles activated in a situation.

Finally, the temporal index matters. $E_{i,t}$, $w_{i,t}$ and $A_{i,t}$ can all change. An action that appears costly at t may preserve a relationship that creates later value; a reputational gain may open a future action set that was previously unavailable. The framework therefore does not assume myopic maximisation. Its more general claim is that identity-mediated action unfolds through trajectories in which current positions condition future opportunities. This temporal structure is what permits cumulative advantage, lock-in, recovery and reconfiguration to be represented within the same model.

7. Discussion

7.1 Theoretical Implications

The model offers a selective formal connection among established debates. Audience-attributed esteem is represented within N, while recognition of rights or membership can operate through access rules and the feasible set (Honneth, 1992/1995). Bourdieu's account of capital motivates the specification of directional conversion functions and constraints (Bourdieu, 1986). Fraser's analysis informs the interaction between evaluative and material processes, although recognition cannot be exhausted by N alone (Fraser, 1997). Plural orders of worth help specify which conversions actors regard as legitimate (Boltanski & Thévenot, 1991/2006). These are analytical translations for the present model, rather than claims that the earlier theories neglected these mechanisms.

The local decision model uses an explicitly scalar index, although its constituent domains retain distinct meanings. Its weights and scale choices require justification for the setting, and non-compensatory commitments cannot be represented by an unrestricted weighted sum alone. An actor may reject a monetary gain because it violates a reciprocal obligation or core commitment. Recording that restriction in the admissible set makes its role transparent rather than assigning an unobserved compensating psychic reward.

7.2 Candidate Indicators and Research Design

Empirical testing should begin with a bounded setting, such as one professional association, a defined observation period and an identified allocator of work opportunities. Researchers must first establish recurring groupness and membership-conditioned allocation. Interview and documentary evidence can identify the rules, while repeated measures distinguish initial resources, actions, subsequent allocations and outcomes. The following indicators and functional forms are candidates for testing, not a validated measurement instrument.

Table 1. Candidate indicators for a bounded study of identity economies

Domain	Candidate observations	Measurement distinction
Ψ	Repeated reports of experienced identity coherence or meaning.	Measure efficacy, effort and distress separately; test discriminant validity.
R	Recognised claims, available assistance, fulfilled requests and obligations owed.	Identify counterparties and return expectations; keep claims and burdens separate.
N	Peer nominations or audience ratings of professional esteem.	Specify audience and period; separate visibility, eligibility and self-esteem.
M	Income during a defined period, liquid assets and liabilities.	Keep flows, stocks and debt separate; state any aggregation and price adjustment.

Table 1 separates candidate observations from the constructs they might represent. Item development should include interviews and piloting, followed by reliability and validity assessment appropriate to each measure. Cross-group or longitudinal comparisons require evidence that indicators retain comparable meanings. Valuation weights should be elicited from separate choice tasks or estimated on training data and tested on held-out choices; the same allocations must not both define and validate the outcome (Flake & Fried, 2020).

7.3 Illustrative Scenario

Consider a fictional professional association whose members exchange referrals and allocate paid work partly through peer standing. Recurring membership expectations are stipulated for

this illustration. A member chooses between mentoring colleagues (a) and accepting a paid assignment that conflicts with an existing commitment (b). Assume locally scaled expected changes $\Delta E(a) = (1, 2, 1, -1)$ and $\Delta E(b) = (-1, -1, 0, 3)$, in the order Ψ, R, N, M . Here the R summary represents access to support, with obligations checked separately. All numbers are assumed for demonstration, not observations or validated scores.

Let $w = (0.3, 0.3, 0.2, 0.2)$ and let the residual penalty ρ equal 0.1 for each action. Equation 4 gives $V(a) = 0.3 + 0.6 + 0.2 - 0.2 - 0.1 = 0.8$ and $V(b) = -0.3 - 0.3 + 0 + 0.6 - 0.1 = -0.1$. Under Equation 5 the member selects mentoring if both options are admissible. If monetary priority rises so that $w = (0.1, 0.1, 0.1, 0.7)$, the indices become -0.4 and 1.8 respectively. If the prior commitment makes b unacceptable, b is excluded regardless of its score. If mentoring is unaffordable, a is practically unavailable. The example separates valuation, commitment and constrained opportunity.

Suppose a subsequent unit gain in peer standing can yield two monetary units through referrals when access is unrestricted. With conversion access $C_{nm} = 0.25$, the same gain yields only 0.5 units. Another member with $C_{nm} = 1$ obtains two units despite an identical initial gain in standing. These assumed coefficients illustrate a conversion bottleneck; they establish neither real exchange rates nor causality. Monetary expenditure on visibility need not produce esteem, so the reverse pathway requires its own observations and parameters.

7.4 Simple Functional Forms and Identification

For a local approximation to a specified pathway, use $\Delta v_k = \beta_{jk} C_{jk} \Delta v_j + \varepsilon_k$, where β_{jk} is a directional coefficient and ε_k represents other influences. β_{jk} may be positive or negative. With changing scales, coefficient magnitudes are not directly comparable across directions. If both β_{jk} and C_{jk} are unknown and only domain changes are observed, their product is identified at best. Estimate effective conversion first, or use independently measured access and justified variation to separate the components. A reverse pathway requires a separate model; it is not the reciprocal of the forward coefficient.

A simple threshold candidate is $\text{logit } P(I_{i,t+1} = 1) = \alpha + \beta \Psi_{i,t} + \gamma \max(0, \Psi_{crit} - \Psi_{i,t}) + \theta^T X_{i,t}$, where $\text{logit}(p) = \ln[p/(1 - p)]$, I records subsequent disruption, and X contains prespecified contextual variables. The term γ represents an additional slope below Ψ_{crit} . Compare this model with $\gamma = 0$, report uncertainty in the threshold and coefficients, and validate predictions on new observations. The threshold must not be selected and assessed on the same data without accounting for selection.

Feedback can be explored with repeated observations using a local model $E_{i,t+1} = b_i + B E_{i,t} + \Gamma X_{i,t} + \varepsilon_{i,t+1}$, where b_i captures stable actor differences and off-diagonal elements of B represent lagged cross-domain associations. These associations are not automatically conversion effects. Gatekeeper records, referral histories, credible interventions or other identification strategies are needed to distinguish mechanisms from common shocks and selection. Within-person and between-person relationships should be distinguished, and causal interpretation must rest on a defensible design (Rohrer & Murayama, 2023).

7.5 Testable Propositions and Limits

The framework generates several testable propositions. First, actors with access to more effective conversion pathways should accumulate multidimensional advantage faster than actors with similar initial endowments but weaker conversion access. Second, normatively illegitimate conversions should produce negative spillovers in R or N even when M increases. Third, the effect of shocks should be nonlinear where critical thresholds exist. Fourth, changes

in identity narratives should alter the weighting vector and therefore change choices even when objective resource positions remain constant.

These propositions also mark the model's limits. The dimensions require discriminant and predictive validation; indicators may vary across settings; and the illustrative functional forms require comparison with simpler alternatives. The present contribution is a theoretical architecture and research programme, not a completed quantitative explanation of identity.

A further advantage of the architecture is comparative. The same four-dimensional vocabulary can be used without assuming that different identity economies assign the same meaning or weight to each dimension. A religious community, professional association, family network and political movement may all organise Psychic, Reciprocal, Renown and Monetary value differently. Comparison can therefore focus on the structure of allocation and conversion rather than presuming substantive equivalence. This is especially important for cross-cultural research, where imposing a single metric of status or welfare risks obscuring the locally legitimate forms through which value is recognised and exchanged.

8. Conclusion

This article has proposed a formal model of identity as participation in a multi-dimensional value system. Four analytically distinct domains - Psychic value, Reciprocal resources and obligations, Renown and Monetary value - define an actor's configuration at a given time. Social action changes that configuration under identity-dependent weights, risk and constraints. Value may move between dimensions, but conversion is asymmetric, normatively regulated and unequally accessible. Feedback loops and thresholds can then amplify advantage, disadvantage and instability.

The principal theoretical claim is that inequality cannot be understood only as unequal possession of resources. It also concerns unequal feasible action sets, unequal capacity to convert one form of value into another, and unequal vulnerability to breakdown in the relations sustaining value. In this sense, identity is not merely an object of recognition or a modifier of economic choice. It is part of the architecture through which heterogeneous forms of social value are organised.

The model is intentionally provisional. Its usefulness will depend on whether the four dimensions can be operationalised, whether conversion and threshold propositions survive empirical testing, and whether the framework explains outcomes better than simpler alternatives. Its purpose is therefore not to close debate about identity, but to make a set of mechanisms explicit enough to be criticised, compared and tested.

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