

Self-Reproducing Generative Power: Dependency, Counter-Power, and Closure

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Abstract

Power can persist through law, habit, coordination, external scarcity, or organizational inertia. A narrower mechanism appears when present exercise changes a condition of future power and that change returns as greater later power. This paper proposes the term *self-reproducing generative power* for that mediated return. The proposal is actor-, target-, domain-, action-, comparison-, and horizon-specific. Three candidate paths receive separate treatment. A material path runs through practical exit and dependence. A counter-power path runs through contraction of viable contestation. An institutional-legitimation path runs through justificatory assertion, audience uptake, institutional conversion, and later power. Under a local differentiable model, each path contributes a chain-rule product to the one-step power multiplier. The direct persistence term remains algebraically separate. The result measures local mediated return; multidimensional stability depends on the full Jacobian and nonlinear regime. A set-valued construction defines counter-power through efficacious actions that preserve a declared viability condition. A finite-trace countermodel then establishes that an observed trajectory of power and dependence underdetermines an endogenous return loop across unrestricted model classes. The paper therefore requires edge-specific causal evidence, plausible rivals, longitudinal-confounding analysis, and strategic-response analysis. Self-reproduction, restricted closure, domination, injustice, generativity exploitation, responsibility, and legal wrong remain separate registers. The current contribution is a revisable mechanism grammar, a conditional local derivation, an identification warning, and a comparative research programme. Empirical prevalence, historical application, normative evaluation, and legal classification remain open.

Keywords: power; dependence; counter-power; closure; legitimation; path dependence; causal mediation; generative justice.

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.

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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, 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, 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 P018 and the fourth promoted paper in the research-stage *Generative Injustice* programme. P010 studies control and accumulation of realization conditions. P011 studies an open-then-enclose dependency mechanism. P015 develops a typed lifecycle diagnostic for value circulation, P016 develops transaction ontology and future-generative positions, and P017 supplies a source-target transfer firewall for ocean-inspired relational models. The present paper adds a mediated future-power return, counter-power, institutional legitimation, and closure architecture. Later projects retain responsibility for criticality, viable escape, dynamic consent, and portability.

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1 Introduction

This section establishes the motivating configuration, the paper’s mechanism question, its limited position, and the sequence of argument. It begins with the researcher-origin example, distinguishes mediated self-reproduction from several forms of persistence, and states the contributions developed in the later sections.

Consider a relation in which actor A currently controls resources, permissions, or conditions relevant to actor B ’s independence. Exercise of that control prevents B from acquiring work, funds, relations, or other means required to leave the relation. Dependence then grows. The resulting dependence supports the continuation or enlargement of A ’s power. A further step can occur when A presents the produced dependence as evidence that continued control is helpful, prudent, or necessary, and an institution converts that justification into renewed authority or resources.

Wanhong Huang proposed this configuration during a wider inquiry into generative justice and value circulation. The proposal first described control that blocks resources for independence and thereby maintains itself. It then identified a justificatory reversal in which the controller invokes control-produced dependence as proof of help. A later refinement shifted the object from rights in general to powers capable of acting on the conditions of future power. This paper reconstructs that insight as a causal mechanism and keeps the later correction central.

Several familiar processes can produce the same visible sequence of continuing power. A legal office can renew through constitutional procedure. An organization can persist through coordination and sunk cost. A party can remain dependent because of an external shock. Two groups can reproduce a shared institution through mutual support. A power relation can continue through direct inertia. These processes motivate a narrower definition.

Definition 1.1 (Self-reproducing generative power). Fix a source actor, affected actor, domain, action class, comparison regime, and horizon. A focal power is *self-reproducing* over a path when present exercise changes at least one condition of future focal power and the mediated change makes a positive material contribution to later focal power.

The adjective *generative* names the mechanism’s action on conditions that produce, preserve, expand, contest, or replace power. It carries neither a positive moral valence nor a claim about generativity as a universal substance. The definition directs attention to a return path:

present exercise $\longrightarrow$ condition of future power $\longrightarrow$ future focal power.

Claim 1.2 (Recursive-power position). Self-reproducing generative power is best studied as a family of typed, path-specific causal mechanisms. Material dependence, viable counter-power, and institutional legitimation form three candidate return paths. A restricted closure classification additionally requires contraction of practical exit, counter-power, or revisability. Normative and legal classifications require their own premises and evidence.

Four contributions support Claim 1.2. First, the paper defines a typed power coordinate and separates power capacity from present exercise. Second, it decomposes the three return paths and derives their local chain-rule contributions. Third, it defines viable counter-power as a set of efficacious actions satisfying a transition-safety condition. Fourth, it constructs a finite-trace rival showing that observed persistence and dependence leave the endogenous loop underdetermined across unrestricted model classes.

Section 2 positions the proposal within power, dependence, non-domination, exit, organizational, and institutional traditions. Section 3 defines the state and causal estimand. Section 4 develops the paths and local derivation. Section 5 separates counter-power, closure, and normative registers.

Section 6 establishes finite-trace underdetermination and identifies causal obligations. Section 7 presents a comparative empirical programme. Section 8 records open obligations and the current position.

2 Antecedent Theories and Contribution Boundary

This section locates the proposed mechanism within established traditions and defines the paper’s contribution boundary. It moves from relational power and dependence through agenda control, disciplinary formation, non-domination, exit, resource dependence, path dependence, institutional reproduction, and generative justice. Table 1 records the licensed relation and the remaining transfer obligation.

Dahl’s relational definition makes actors and targets explicit [3]. Emerson connects power and dependence within exchange relations [5]. Bachrach and Baratz broaden power analysis toward agenda control and nondecision [2], while Lukes places decision, agenda, preference, consent, and domination within a wider debate [11]. These lineages support careful typing. They leave open the present paper’s particular temporal mechanism.

Foucault’s study of discipline provides a major ancestor for analyses of power that organize conduct, institutions, and subjects [6]. The present construction adopts a limited lesson: power can act through the conditions under which conduct and capacity become possible. Its causal estimands and path equations are proposals of this manuscript.

Republican theory directs attention to freedom as non-domination and to institutions of contestation [13]. Lovett develops an account linking domination with dependency and arbitrary power [10]. These works motivate the counter-power and arbitrariness coordinates. Their normative criteria retain authority within their own theories. P018 supplies a causal mechanism and a closure profile.

Hirschman’s exit, voice, and loyalty framework distinguishes responses to organizational decline [8]. Pfeffer and Salancik analyze organizational dependence on environmental resources and the control such dependence permits [14]. These traditions support attention to substitution, portability, and external support. P018 asks whether focal exercise helped produce the dependence and whether that dependence materially increased later focal power.

Path-dependence research emphasizes increasing returns, sequence, costly reversal, and critical junctures [15, 12]. Greif and Laitin model endogenous institutional change through self-reinforcement [7]. Acemoglu and Robinson show how investment in de facto political power can preserve outcomes across formal institutional change [1]. Tilly develops relational and organizational mechanisms of durable inequality [17]. These are close ancestors. The present paper asks for a focal intervention, declared mediators, and a return to the same typed power coordinate.

Eglash and collaborators describe generative justice through unalienated value flows that return benefits to value-generating human and nonhuman communities [4]. That programme motivates the wider inquiry. The paper studies a possible reverse circulation in which power changes generative conditions and captures the return as future power. The literature connection is programmatic; the definitions and formal construction presented here remain the author’s responsibility.

2.1 Adjacent Project Boundary

This subsection distinguishes P018 from two adjacent manuscripts in the same research programme. Its role is to preserve cumulative development while preventing the present mechanism from absorbing earlier questions.

P010 studies control, distribution, and accumulation of realization conditions. Its focal structure can exist without a dyadic relation between the advantaged and constrained parties. P011 studies

Table 1: Antecedent traditions and contribution boundaries

Tradition	Licensed antecedent role	P018 contribution boundary
Relational power and dependence	Power concerns specified relations and targets; dependence structures relational power.	Adds a mediated return from present exercise through changed conditions to later focal power.
Agenda and multidimensional power	Procedures, agendas, consent, and latent conflict widen the observable field.	Adds time-indexed condition change and edge-specific future-power estimands.
Discipline and subject formation	Power can organize conduct, institutions, capacities, and subjects.	Represents one bounded causal grammar and leaves historical interpretation to domain research.
Non-domination	Dependence, arbitrariness, uncontrolled capacity, and contestability carry distinct normative importance.	Keeps self-reproduction, closure, and domination in separate registers.
Exit and resource dependence	Exit, voice, substitution, and environmental reliance shape organizational relations.	Specifies focal production of dependence and its return as later power.
Institutional reproduction	Increasing returns, sequence, self-reinforcement, and de facto investment can sustain institutions and outcomes.	Separates focal mediated return from path dependence, coordination, and external replay.
Generative justice	Unalienated circulation returns value to the communities and entities that generate it.	Studies a candidate pathology in which present power redirects conditions into its own future reproduction.

an open-then-enclose sequence in which invited reliance creates a dependency option for the opening party. P018 asks a further causal question: did present exercise change dependence, counter-power, or institutional authorization in a way that increased later focal power? The future-power return and closure profile are the new objects.

3 Typed Power and Recursive Conditions

This section specifies the model’s objects, domains, and causal target. It first defines a context-indexed power coordinate, then distinguishes power capacity from exercise, introduces the mediator state, and gives a path-specific self-reproduction estimand. Table 2 summarizes the symbols used throughout the formal argument.

Definition 3.1 (Targeted power coordinate). A power coordinate $P_t^{A \rightarrow B, d, \chi}$ measures or orders A ’s capacity at time t to affect B ’s declared action or condition class χ in domain d , relative to a stated comparison and horizon. Comparisons across coordinates require an independently defended aggregation or partial order.

Definition 3.1 follows the relational discipline of power theory while adding temporal and intervention detail. An employment permission, control of a resource, agenda authority, a review veto, and interpersonal influence belong to different coordinates until a theory relates them. Vector-valued and partially ordered profiles are available when a scalar would erase those differences.

The state used in this paper is

$$S_t = (P_t, E_t, D_t, Q_t, J_t^a, J_t^u, J_t^i, V_t, Z_t), \quad (1)$$

Table 2: Typed symbols for the recursive-power model

Symbol	Type	Interpretation requirement
$P_t^{A \rightarrow B, d, \chi}$	Context-specific power coordinate	Capacity of A to affect B 's declared action or condition class χ in domain d .
A_t^P	Exercise intervention	Specified use of focal power at time t , with a coherent disabling comparison.
E_t	Practical exit coordinate	Effective access to a declared alternative under costs, information, timing, and safety constraints.
D_t	Dependence coordinate	Reliance on the focal actor or relation for declared realization conditions.
$\mathcal{Q}_t$	Set-valued counter-power	Viable actions capable of review, refusal, substitution, revocation, coalition, appeal, or replacement.
J_t^a, J_t^u, J_t^i	Legitimation stages	Assertion, relevant-audience uptake, and institutional conversion.
V_t	Revisability coordinate	Practical capacity to alter the focal relation, its terms, or its holder.
Z_t, U_t	Background and exogenous state	Observed or latent conditions and exogenous inputs with declared causal roles.

with transition

$$S_{t+1} = \Psi_t(S_t, A_t^P, A_t^B, U_{t+1}). \quad (2)$$

The superscripts on P_t are suppressed after the context is fixed. A_t^B records actions by B or aligned actors, including resistance, coalition, substitution, and learning.

Definition 3.2 (Coherent exercise comparison). An exercise comparison consists of an enabling intervention a^1 and a disabling intervention a^0 that refer to the same focal power, time, target, domain, action class, horizon, and relevant background arrangement. Differences introduced to make either intervention feasible are recorded as part of the comparison.

Coherence matters because disabling a control action can require replacement support, altered authority, or a changed institutional environment. A comparison that removes both the controller and the resource controlled would mix exercise with resource absence. A comparison that supplies independent support may estimate the effect of a safeguard. The two questions deserve separate designs.

For a declared causal path π from present exercise to later focal power, define the edge-intervention contrast

$$\text{SR}_\pi(t, h) = \mathbb{E}[P_{t+h}(a^1; \pi) - P_{t+h}(a^0; \pi)]. \quad (3)$$

The notation $(a; \pi)$ means that the intervention is transmitted along the declared edges while assignments on other pathways follow the stated causal model.

Definition 3.3 (Mediated self-reproduction screen). A focal power satisfies the self-reproduction screen over (t, h, π) when $\text{SR}_\pi(t, h) > \epsilon_P$ and π contains at least one condition of future power changed by present exercise.

The material threshold ϵ_P prevents arbitrarily small modeled effects from carrying the classification. Its value is domain-specific. A direct coefficient from P_t to P_{t+h} records persistence. The mediator requirement identifies the generative return.

Assumption 3.4 (Causal-model declaration). Every use of Equation 3 declares the causal graph, intervention semantics, consistency conditions, interference scope, positivity conditions, mediator ordering, and assumptions supporting identification or bounds.

Assumption 3.4 turns the definition into a research obligation. Equation 3 remains a proposed estimand until a design supports it. Observed dependence, power, and time order can motivate the path; they provide limited causal resolution by themselves.

4 Causal Return Paths and Local Loop Gain

This section develops the mechanism’s internal structure and formal consequences. It presents three path families, derives their local chain-rule terms, assembles the one-step multiplier, and states the boundary between mediated return and full-system stability. Table 3 summarizes the paths before the derivation.

4.1 Material and Counter-Power Returns

This subsection defines the two shorter return paths. Its objective is to expose the sign and evidence target of every edge while preserving alternative mechanisms at each transition.

The material path is

$$\pi_M : A_t^P \longrightarrow E_{t+1} \downarrow \longrightarrow D_{t+1} \uparrow \longrightarrow P_{t+h} \uparrow . \quad (4)$$

The first edge concerns practical exit. Formal permission to leave can coexist with unavailable transport, funds, records, information, care, employment, or safe alternatives. The second edge concerns dependence on the focal relation for a declared condition. The third edge requires a conversion mechanism from dependence to future power, such as renewed authority, controlled access, compliance leverage, or resource allocation.

The counter-power path is

$$\pi_Q : A_t^P \longrightarrow Q_{t+1} \downarrow \longrightarrow P_{t+h} \uparrow . \quad (5)$$

The set contraction can involve appeal, refusal, coalition, review, substitution, oversight, revocation, or replacement. An application must state which actions belong to the domain and how their efficacy and transition safety are evaluated.

4.2 Institutional Legitimation Return

This subsection decomposes the justificatory reversal into institutional stages. Its objective is to give discourse, interpretation, decision, and future-power effects their own evidence targets.

$$\begin{aligned} \pi_J : A_t^P \longrightarrow E_{t+1} \downarrow \longrightarrow D_{t+1} \uparrow \longrightarrow J_{t+1}^a \\ \longrightarrow J_{t+2}^u \longrightarrow J_{t+3}^i \longrightarrow P_{t+h} \uparrow . \end{aligned} \quad (6)$$

Here J^a is an assertion that dependence supports continuation. J^u is uptake by a relevant audience, such as a decision maker, constituency, profession, organization, or administrative body. J^i is conversion into a rule, mandate, budget, credential, permission, enforcement resource, or replacement barrier. The final edge measures whether that converted object changes later focal power.

This decomposition protects two distinctions. Text frequency can establish the presence of a phrase while leaving uptake open. Audience acceptance can shape interpretation while leaving formal or material authority unchanged. Institutional analysis begins where the relevant decision pathway is specified.

Table 3: Candidate return paths and decisive breakpoints

Path family	Causal sequence	Decisive breakpoint examples
Material dependence	Exercise lowers practical exit; reduced exit increases dependence; dependence increases later focal power.	Redundant provision preserves exit; dependence follows an external shock; dependence receives limited institutional conversion.
Counter-power	Exercise contracts viable contestation; reduced contestation increases later focal power.	Review remains effective; resistance expands coalition capacity; contestation has limited effect on the focal coordinate.
Institutional legitimation	Exercise contributes to dependence; dependence supports an assertion; audiences take it up; institutions convert it; converted authority or resources increase later focal power.	Assertion lacks uptake; uptake lacks institutional conversion; converted rules remain dormant; independent reasons explain renewal.

4.3 Local Derivative Decomposition

This subsection derives the local contribution of each return path. Its role is mathematical and limited: the derivation states a first-order result under a differentiable, path-declared model and then identifies the additional conditions required for a stability claim.

Assumption 4.1 (Local differentiability and path decomposition). Around a reference state s^* , the scalarized transition components are differentiable. The declared paths, a direct persistence term, and a remainder exhaust the first-order derivative of P_{t+1} with respect to P_t .

Use subscripts to denote partial derivatives evaluated at s^* . Along the material composition $P' = f_D(D)$, $D = f_E(E)$, and $E = f_P(P)$, the chain rule gives

$$L_M = \frac{\partial P'}{\partial D} \frac{\partial D}{\partial E} \frac{\partial E}{\partial P} = P'_D D'_E E_P. \quad (7)$$

A common positive-return sign pattern is $E_P < 0$, $D_E < 0$, and $P'_D > 0$. Each sign is an empirical target. Independent provision can make $E_P = 0$; institutional refusal to convert dependence into authority can make $P'_D = 0$; organized resistance can make $P'_D < 0$.

For the counter-power composition,

$$L_Q = \frac{\partial P'}{\partial Q} \frac{\partial Q}{\partial P} = P'_Q Q_P. \quad (8)$$

A positive return can arise when current power contracts effective counter-power and effective counter-power constrains later focal power, giving two negative derivatives. Protected review can yield $Q_P = 0$, while mobilizing backlash can yield $Q_P > 0$.

For the legitimation composition,

$$L_J = P'_{J_i} J^i_{J_u} J^u_{J_a} J^a_D D'_E E_P. \quad (9)$$

One zero factor interrupts the first-order path. A controller's assertion with limited uptake gives $J^u_{J_a} = 0$. Audience uptake with an effective institutional veto gives $J^i_{J_u} = 0$.

Proposition 4.2 (Local mediated return decomposition). *Under Assumption 4.1, the three declared first-order mediated contributions are the products in Equations 7–9. If ρ denotes the direct persistence derivative and L_R the remainder, then*

$$\frac{\partial P_{t+1}}{\partial P_t} = \rho + L_M + L_Q + L_J + L_R. \quad (10)$$

Proof. Apply the chain rule to each differentiable composition. Add the direct derivative, the three path derivatives, and the declared remainder under the first-order exhaustiveness part of Assumption 4.1. $\square$

Corollary 4.3 (One-dimensional local behavior). *For an isolated one-dimensional map whose derivative equals the right side of Equation 10, the reference point is locally attracting when the absolute multiplier is below one and locally repelling when it exceeds one.*

Corollary 4.3 has a narrow domain. Multidimensional stability depends on the full Jacobian. Delays, switching, nonlinear interactions, noise, thresholds, and strategic adaptation can change the conclusion. A positive mediated return can coexist with a stable system. A persistent system can have $\rho > 0$ and $L_M = L_Q = L_J = 0$. The distinction between self-reproduction and stability is therefore structural.

5 Counter-Power, Closure, and Normative Registers

This section defines viable counter-power, constructs open and closed recursive configurations, and preserves the normative firewall. Its objective is to show how self-reproduction can occur within contrasting institutional profiles and which additional coordinates make closure a stronger classification.

5.1 Viable Counter-Power

This subsection turns counter-power from a label into a set-valued target. It requires each candidate action to combine practical availability, efficacy, and transition safety under a declared horizon.

Let K be a viability set, $\bar{P}$ a focal-power threshold, and α a tolerated transition risk.

Definition 5.1 (Viable counter-power set).

$$\mathcal{Q}_B(s_t; h, K, \alpha) = \left\{ q \in \mathcal{U}_B(s_t) : \Pr(P_{t+h} \leq \bar{P}, S_{t:t+h} \in K \mid \text{do}(q)) \geq 1 - \alpha \right\}. \quad (11)$$

The viability set can encode physical safety, subsistence, legal standing, continuity of care, informational integrity, or other domain-specific minima. The power threshold can represent revocation, review, replacement, bounded scope, or another declared efficacy condition. Set inclusion provides one comparison:

$$\mathcal{Q}_B^m(s_t) \subsetneq \mathcal{Q}_B^b(s_t). \quad (12)$$

A preorder or several incomparable dimensions may be preferable when actions serve different values. A scalar $Q_t = \mu(\mathcal{Q}_B)$ requires a defended measure μ .

5.2 Recursive Maintenance and Restricted Closure

This subsection separates self-reproducing maintenance from restricted closure. It develops the distinction through constructed configurations and a multi-register profile.

Definition 5.2 (Restricted generative power closure). A self-reproducing power relation is a *restricted generative power closure candidate* when its operation materially contracts practical exit, viable counter-power, or revisability relative to a coherent comparison.

Table 4 contains two cases with positive recursive maintenance and open institutional profiles. It also contains several mechanism-breaking cases. These configurations support a formal independence result.

Table 4: Constructed recursive configurations and classification boundaries

Configuration	Mediated return	Exit, counter-power, and revisability	Current classification
Constitutional renewal	Public institutions reproduce administrative and electoral conditions.	Elections, review, revocation, opposition, and replacement remain effective.	Open recursive maintenance candidate.
Mutual coordination	Participants invest in shared rules that preserve the institution.	Revision remains symmetrical and practical alternatives remain accessible.	Mutually sustained institution candidate.
External-shock dependence	Focal exercise has limited causal contribution.	Exit contracts because of an outside event.	Dependence with an exogenous rival.
Assertion without uptake	Controller invokes dependence.	Relevant audiences reject or ignore the assertion.	Justificatory event with an interrupted legitimation path.
Redundant provision	Focal exercise attempts to restrict one route.	Independent resources preserve practical exit and counter-power.	Blocked material return path.
Recursive closure	One or more mediated paths increase later focal power.	Practical exit, viable contestation, or revisability materially contracts.	Restricted closure candidate.

Proposition 5.3 (Closure independence). *The mediated self-reproduction screen in Definition 3.3 is insufficient by itself for the restricted closure classification in Definition 5.2.*

Proof. Construct a constitutional renewal configuration in which current institutional power invests in future elections, public administration, review, and contestability. Suppose the investment makes a positive mediated contribution to later institutional capacity, so Definition 3.3 is satisfied. Let practical exit, viable counter-power, and revisability remain equal to or greater than their comparison values. Definition 5.2 then remains unsatisfied. The two classifications are logically independent in this direction. $\square$

The proposition leaves the empirical plausibility and normative quality of the constructed arrangement open. Its role is logical. Protective institutions can reproduce enabling conditions while preserving plural contestation.

5.3 Normative and Legal Firewall

This subsection records the independent questions required for stronger classifications. Table 5 keeps causal, institutional, moral, responsibility, and legal registers distinct.

The profile can be written

$$\Gamma_{A \rightarrow B} = \langle \text{SR}_{\pi_M}, \text{SR}_{\pi_Q}, \text{SR}_{\pi_J}, \Delta E, \Delta Q, \Delta V, \text{Auth}, \text{Arb}, \text{Prop}, \text{Benefit Through}, \text{Legal} \rangle. \quad (13)$$

Equation 13 provides an inspectable profile while leaving aggregation and sufficient moral conditions to the relevant normative theory. A case can change classification when one coordinate or its underlying evidence changes.

Table 5: Registers beyond the recursive-power mechanism

Register	Additional target	Required inquiry
Self-reproduction	Positive mediated return to later focal power.	Path-specific causal evidence and material threshold.
Restricted closure	Contraction of practical exit, viable counter-power, or revisability.	Set, threshold, institutional, and comparison analysis.
Domination	Dependence, arbitrariness, uncontrolled capacity, status, or another theory-specific condition.	Explicit domination theory and case evidence.
Injustice	Standing, baseline, procedure, distribution, recognition, and justification.	Normative bridge argument and plural-value analysis.
Generativity exploitation	Capability contraction and candidate benefit produced or sustained through that contraction.	Baseline-relative capability and benefit-through analysis.
Responsibility	Contribution, knowledge, capacity, role, duty, excuse, and remedy.	Actor-specific causal and normative analysis.
Legal wrong	Legal relation, jurisdiction, proof, defense, and remedy.	Verified primary authority and case-specific facts.

6 Identification and Finite-Trace Underdetermination

This section establishes an identification limit and turns each return path into an empirical obligation. It first constructs a finite-trace rival, then links mediation and longitudinal-confounding methods to the proposed estimands, and finally records plausible substantive alternatives.

6.1 Finite-Trace Countermodel

This subsection proves a limited underdetermination result. Its role is to block inference from an observed persistent sequence to an endogenous return loop across unrestricted model classes.

Proposition 6.1 (Finite-trace underdetermination). *For every finite deterministic observed trajectory $y_{0:T}$ generated by a candidate endogenous recursive-power model $\mathcal{M}_E$, an exogenous replay model $\mathcal{M}_X$ exists that generates the same trajectory and differs under an intervention on current focal power.*

Proof. For each $t < T$, define an exogenous input $U_{t+1} = y_{t+1}$. Let the replay model have transition

$$Y_{t+1} = U_{t+1}. \quad (14)$$

Both models generate $Y_{0:T} = y_{0:T}$ for the realized trace. In $\mathcal{M}_X$, later observations are fixed by the exogenous inputs, so an intervention on the current focal-power coordinate leaves the replayed future fixed. By construction, $\mathcal{M}_E$ can assign a mediated effect to that intervention. The models agree observationally on the finite trace and differ interventionally. $\square$

The replay model is deliberately permissive. Proposition 6.1 establishes a logical limit and offers a benchmark for stronger comparisons. Empirical work should compare the recursive mechanism with direct inertia, external scarcity, common shocks, mutual coordination, authorized delegation, organizational sunk cost, and preexisting incapacity.

Table 6: Edge-specific evidence and rival mechanisms

Edge	Candidate evidence	Principal rivals and absorbers
$A^P \rightarrow E$	Resource, rule, portability, information, or access change under a coherent exercise comparison.	External scarcity, prior exit cost, redundant provision, anticipatory exit.
$E \rightarrow D$	Substitution failure, switching burden, continuation loss, reachable-set contraction.	Chosen specialization, temporary need, independent alternatives.
$D \rightarrow P'$	Renewal, delegated authority, resource transfer, compliance leverage.	Independent authorization, fiduciary duty, resistance, declining controllability.
$A^P \rightarrow \mathcal{Q}$	Changed efficacy of review, appeal, refusal, coalition, oversight, or replacement.	Protected institutions, substitute channels, mobilizing backlash.
$\mathcal{Q} \rightarrow P'$	Reversal, revocation, replacement, or credible constraint.	Symbolic process, weak implementation, external persistence.
$D \rightarrow J^a \rightarrow J^u$	Decision records, framing, endorsement, voting, professional or administrative uptake.	Generic rhetoric, contrary interpretation, independent reason.
$J^u \rightarrow J^i \rightarrow P'$	Rule, mandate, budget, discretion, enforcement, scope, or duration change.	Veto, dormant rule, implementation failure, countervailing authority.

6.2 Edge-Specific Causal Obligations

This subsection translates the three paths into separable evidence targets. Its objective is to make revision possible at the level of one edge while retaining independent results elsewhere. Table 6 gives a compact design matrix.

Causal mediation research emphasizes definitions, identification assumptions, estimation, and sensitivity analysis across model forms [9]. The present paths require that discipline. Their sequential mediators create further complications because current exercise can change later confounders of mediator and outcome.

Marginal structural models were developed for settings in which time-varying confounders are themselves affected by earlier treatment [16]. This lineage identifies a relevant method family. An application still needs its own estimand, treatment strategy, positivity assessment, censoring model, interference scope, and sensitivity analysis. Partial identification or qualitative process tracing may be more defensible when those requirements exceed the available evidence.

6.3 Interference and Strategic Response

This subsection records two features that can change the meaning of every path. Its role is to prevent a static individual-level design from absorbing network effects and strategic adaptation.

Power relations can involve interference. One actor’s exit can alter another’s outside option; one coalition can create counter-power for several parties; an institutional decision can apply to a population; public measurement can change discourse. The unit of analysis and interference neighborhood therefore belong in the case signature.

Actors can also anticipate intervention. A power holder can move restrictions to an unmeasured channel, supply symbolic exit, or accelerate institutional conversion. Affected actors can conceal preparation, build coalitions, or convert a restriction into mobilization. These responses can reverse local derivative signs and create delayed effects. A strategic model becomes appropriate after the

application specifies actors, information, action sets, timing, and objectives.

7 Comparative Empirical Programme

This section converts the mechanism grammar into a staged research programme. It defines the case signature, comparison strategy, configuration sample, and promotion criteria. The method treats positive, boundary, and negative cases as necessary parts of mechanism development.

7.1 Case Signature and Longitudinal Phases

This subsection specifies the minimum description required before measurement. Its objective is to align the causal graph with the institutional history of a case.

A case signature records

$$\mathcal{C} = \langle A, B, d, \chi, t, h, P, A^P, E, D, \mathcal{Q}, J^a, J^u, J^i, V, Z, K, \mathcal{B} \rangle,$$

where $\mathcal{B}$ is the comparison regime. The accompanying narrative separates acquisition, authorization, exercise, condition change, dependence, counter-power change, justification, institutional conversion, later power, review, release, and restoration.

The sequence should preserve evolving roles. A recipient can become a co-governor; a controller can lose formal authority while retaining resource control; an outside provider can create a second dependence; a protected review body can become captured. Each transition updates the typed state in place of inheriting a fixed role label.

7.2 Comparative Configuration Sample

This subsection proposes a minimum comparative sample. Its role is to expose the theory to configurations that share surface features and differ in causal structure.

Table 7 is a design requirement and leaves case availability open. Historical and colonial research would require primary sources, area scholarship, temporal process evidence, rival mechanisms, and collaboration adequate to the domain. Household, care, and developmental relations would require capacity, vulnerability, fiduciary, and safeguarding theories. Organizational and platform research would require institutional, technical, labor, and market evidence.

7.3 Evidence Profile and Promotion Rule

This subsection defines graduated evidence states. Its role is to replace a single binary verdict with an inspectable record of which edges and rivals receive support.

Let

$$\begin{aligned} \mathcal{E}_{\text{loop}} = \langle & E_{P \rightarrow E}, E_{E \rightarrow D}, E_{D \rightarrow P'}, E_{P \rightarrow Q}, E_{Q \rightarrow P'}, \\ & E_{D \rightarrow J^a}, E_{J^a \rightarrow J^u}, E_{J^u \rightarrow J^i}, E_{J^i \rightarrow P'}, E_{\text{rivals}}, E_{\text{robust}} \rangle. \end{aligned} \quad (15)$$

Each coordinate records the design, estimand, data, assumptions, result, uncertainty, and principal sensitivity analysis. The research report can then use five graduated statuses:

path proposed $\prec$ edge supported $\prec$ path supported under assumptions
 $\prec$ comparative mechanism supported $\prec$ replicated mechanism.

Research Obligation 7.1 (Prospective defeat conditions). Before analysis, each application states the edge results, rival-model results, measurement failures, sensitivity thresholds, and strategic responses that would narrow or retire each proposed path.

Table 7: Minimum comparative configuration sample

Case role	Shared visible pattern	Mechanism target	Selection value
Positive material case	Power, reduced exit, dependence, later power	Every edge of π_M	Tests the shortest researcher-origin path.
Positive legitimation case	Dependence and public justification	Assertion, uptake, institutional conversion, later power	Tests the strongest multi-stage claim.
Open recursive case	Institution reproduces enabling conditions	Positive return with preserved contestability	Tests closure independence.
External-shock boundary	Exit contraction and dependence	Zero focal contribution to initial contraction	Tests causal-source discrimination.
Rhetorical boundary	Controller asserts necessity	Limited uptake or conversion	Tests discourse-to-institution separation.
Redundant-support negative	Attempted restriction	Practical exit and counter-power remain effective	Tests absorption and safeguard mechanisms.
Inertial negative	Long-lived focal power	Direct persistence with limited mediated return	Tests persistence separation.

Prospective defeat conditions protect revision at the right level. If redundant provision preserves exit, the material path narrows. If assertion receives uptake while institutional conversion remains limited, a discourse result survives and the future-power return narrows. If a focal loop exists with small magnitude, the causal mechanism survives and system-level explanatory priority narrows.

8 Research Obligations and Conclusion

This section consolidates the paper’s open tasks and bounded conclusion. It groups the remaining work into conceptual, causal, comparative, dynamical, and normative obligations and then restates the position at its present evidential level.

Research Obligation 8.1 (Concept and measurement). Develop domain-specific measures or partial orders for focal power, practical exit, dependence, viable counter-power, revisability, and institutional conversion. Report disagreements among reasonable specifications.

Research Obligation 8.2 (Causal identification). Specify coherent exercise interventions, longitudinal confounding structure, mediator ordering, interference scope, strategic response, positivity, and sensitivity analysis for every claimed path.

Research Obligation 8.3 (Comparative validity). Test positive, open-recursive, boundary, and negative configurations within a bounded domain before proposing cross-domain invariants.

Research Obligation 8.4 (Dynamical extension). For any stability, attractor, metastability, or transition claim, specify the full dynamical system and derive the relevant Jacobian, nonlinear, stochastic, delay, switching, or strategic result.

Research Obligation 8.5 (Normative and legal bridge). State the theory and evidence connecting a supported causal path to closure, domination, injustice, generativity exploitation, responsibility, remedy, or legal classification.

Research Obligation 8.6 (Originality and historical positioning). Complete a systematic full-text review of power reproduction, elite reproduction, dependency, legitimation, organizational lock-in, counter-power, and institutional self-reinforcement before asserting historical priority or comparative novelty.

The paper’s current result is modest and usable. A power relation is self-reproducing in the proposed sense when present exercise changes a condition of future focal power and that condition returns as a positive material contribution to later power. Material dependence, counter-power impairment, and institutional legitimation provide three path families. Their local derivatives can be separated from direct persistence under a declared differentiable model. A finite observed trajectory leaves the endogenous loop underdetermined across unrestricted rivals. Closure and normative verdicts require additional coordinates.

This architecture supports a disciplined research programme. It asks which edge operates, which rival absorbs the effect, which intervention remains coherent, which counter-power is practically viable, and which conclusion the current evidence can bear. It also allows protective or democratic institutions to reproduce enabling conditions while preserving contestability. The mechanism becomes more informative as applications supply sharper types, comparisons, causal designs, and defeat conditions.

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