

The Self-Serving Loop: Ideology, Institutional Violence, and the Manufacture of Truth in Religious and Medical Collectives

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Abstract

This essay examines the structural homology between religious and medical institutions as self-perpetuating ideological systems. Drawing on Foucault's analysis of power-knowledge, Illich's critique of iatrogenic harm, Kuhn's paradigm theory, and the social constructionism of Berger and Luckmann, it argues that both domains operate through self-serving loops of justification that obscure their contingent, socially constructed nature. The victims of these loops are the uncritical believers and dependent patients who surrender epistemic and moral agency to credentialed elites claiming privileged access to transcendent truths. By revealing the absence of objective truth 'out there' and exposing the conventions of understanding that collectives mistake for reality, the essay demonstrates how both religious and scientific institutions perpetuate forms of symbolic, psychological, and systemic violence while sincerely believing themselves to be instruments of salvation or healing.

Keywords: Ideology; Self-Serving Loop; Epistemic Violence; Iatrogenesis; Social Constructionism; Medical Sociology; Sociology of Religion; Power-Knowledge; Hegemony; Structural Violence; Professional Credentialing; Patient Autonomy



Figure

Introduction

Human beings rarely submit to raw power alone; we submit to power that explains itself, power that claims to be righteous, necessary, scientifically validated, or ordained by the heavens. This fundamental insight, articulated with particular force by Michel Foucault, reveals that domination persists not through coercion but through the production of subjects who believe in the legitimacy of their subjection [1]. Systems endure not simply because they govern bodies but because they govern the mind's need for coherence and belonging. Whether in the precincts of religion or the halls of medicine, the most enduring institutions are those that cloak authority in ideology-and that ideology, in turn, becomes the engine that reproduces the system itself.

This essay argues that religious and medical systems share a structural homology that extends far beyond superficial resemblance. Both operate through what I term a self-serving loop of self-justification: a circular reasoning pattern in which the system's claims to legitimacy are validated by criteria that the system itself defines and controls. Both domains produce and reproduce themselves through ideological mechanisms that obscure their contingent, socially constructed nature while presenting themselves as conduits of transcendent truth-whether divine revelation or scientific fact. And both, crucially, generate victims: the 'poor uncritical believers' and dependent patients who are caught in webs of authority they lack the resources to question.

Theoretical foundations

The theoretical foundation of this analysis rests on three interrelated claims. First, following the sociology of knowledge tradition from Mannheim through Berger and Luckmann, I maintain that there is no unmediated access to 'truth' independent of the social frameworks through which knowledge is constructed, legitimated, and transmitted [2]. Second, drawing on Thomas Kuhn's analysis of scientific revolutions and Pierre Bourdieu's theory of symbolic power, I argue that what counts as knowledge in any domain is determined by paradigmatic commitments and institutional interests that cannot be grounded in external, objective criteria [3,4]. Third, following Ivan Illich's prophetic critique of institutional medicine, I contend that systems ostensibly designed to heal or save often generate the very harms they claim to remedy [5].

The philosophical scaffolding of this argument requires careful attention to the epistemological question: What does it mean to say there is no truth 'out there'? This claim is easily misunderstood as nihilism or crude relativism. The position I advance is more nuanced: it is not that truth does not exist, but that truth is always truth-for-a-community, truth within a framework, truth according to criteria that are themselves products of historical contingency and social agreement. Richard Rorty captured this insight when he argued that we should abandon the 'mirror of nature' metaphor-the idea that human minds or languages accurately represent an independent reality-and instead understand truth as what our peers will let us get away with saying [6]. This is not epistemological anarchy; it is epistemological humility.

Ludwig Wittgenstein's later philosophy provides the conceptual tools for understanding how communities construct and maintain their truth-frameworks. His notion of 'language-games' and 'forms of life' suggests that meaning is not a private mental act but a public, rule-governed practice embedded in communal activities [7]. To speak a language-whether the language of theology or the language of medicine-is to participate in a shared form of life, to accept the rules of a game one did not create. The criteria for what counts as a valid move in the game are internal to the game itself. There is no Archimedean point outside all language-games from which to evaluate them. This does not mean all language-games are equally valid for all purposes; it means their validity cannot be established by appeal to a neutral, objective standard.

Peter Berger and Thomas Luckmann's *The Social Construction of Reality* extends these insights into a comprehensive sociology of knowledge. They argue that human beings create social worlds through processes of externalization, objectification, and internalization. We externalize our beliefs and practices; they become objectified as 'the way things are'; and subsequent generations internalize them

as reality itself, forgetting that they are human creations [2]. This dialectical process explains how institutions acquire the appearance of natural necessity when they are, in fact, products of historical accident and social negotiation. Religion and medicine both exemplify this reification: what began as human responses to existential anxiety and physical suffering have become cosmic truths and scientific laws.

The concept of the self-serving loop requires more precise articulation. A self-serving loop exists when a system's claims to legitimacy are validated by criteria that the system itself controls. Consider: We trust the religious leader because he has access to sacred truth. How do we know he has access? Because he has been certified by the religious institution. How do we know the institution's certification is valid? Because it was established by those who had access to sacred truth. The circularity is seamless. The same structure operates in medicine: We trust the physician because she has scientific knowledge. How do we know? Because she has been licensed by the medical board. How do we know the board's criteria are valid? Because they were established by those with scientific knowledge.

This circularity is not an incidental flaw; it is the structural core of ideological systems. Louis Althusser's analysis of ideology as a system that 'interpellates' subjects-that calls them into being as subjects who recognize themselves in the ideology's address-illuminates how the loop sustains itself [8]. The individual who is hailed by the religious or medical institution does not experience the hailing as external imposition; she experiences it as recognition of her true nature. The believer recognizes herself as a child of God who naturally defers to spiritual authority; the patient recognizes herself as a body requiring expert management. In both cases, the subject is constituted by the very system to which she then submits.

Antonio Gramsci's concept of hegemony extends this analysis by showing how dominant ideologies achieve consent rather than mere compliance [9]. Hegemonic power operates not through force but through the naturalization of particular worldviews, making them appear as common sense rather than partisan perspectives. Both religious and medical institutions achieve hegemonic status: their interpretive frameworks become the taken-for-granted background against which questions are asked and answers evaluated. To question the framework itself-to ask whether the sacred texts really contain divine wisdom, or whether evidence-based medicine really represents objective truth-is to commit a category error, to violate the rules of the game. The framework protects itself by defining what counts as a legitimate question.

Religious systems provide the most transparent examples of self-serving ideological loops, perhaps because their claims to transcendent authority are explicit rather than masked by the rhetoric of objectivity. The sociology of religion, from Émile Durkheim through Clifford Geertz, has long recognized that religious beliefs and practices serve social functions beyond their ostensible spiritual content [10,11]. Religion sacralizes social arrangements, legitimates authority structures, and provides symbolic resources for making sense of suffering and death. These functions, however, are invisible to believers who experience their faith as a response to transcendent reality rather than a social construction.

Religious leaders often claim access to hidden truths drawn from ancient sacred texts, mediated through esoteric knowledge available only to the initiated. The structure of this claim deserves analysis. The sacred text-Torah, Gospel, Quran, Veda-is treated as a repository of divine wisdom that transcends human understanding. But the text does not interpret itself; it requires authoritative interpreters who can discern its true meaning. These interpreters-rabbis, priests, imams, gurus-are credentialed by institutions that claim continuity with the original revelation. The institution's authority derives from the text; the text's meaning derives from the institution. The circle closes.

Max Weber's analysis of routinization provides crucial insight into how charismatic religious authority becomes institutional authority [12]. The prophet or founder experiences direct access to the divine; his disciples experience access through him; subsequent generations experience access through the institution that claims to preserve his teaching. At each remove, the living encounter with transcendence becomes more mediated, more proceduralized, more bureaucratic. Yet the institution continues to trade on the charisma of its origins,

claiming for itself the authority that once resided in extraordinary individuals. The gap between the institution's self-presentation and its actual nature widens with each generation.

The result is a collective psychology of dependency in which believers surrender moral and epistemic agency to credentialed authorities. The believer learns that questioning authority is not merely mistaken but sinful—a symptom of spiritual insufficiency rather than intellectual virtue. Doubt becomes evidence of the doubter's deficiency rather than grounds for reassessing the doctrine. As Ernst Troeltsch observed in his sociology of religious communities, the sectarian logic that defines truth as possession of the elect simultaneously defines error as moral failure [13]. The system cannot be wrong because wrongness has been defined as deviation from the system.

This dynamic produces what I call epistemic violence: the systematic suppression of alternative ways of knowing, the delegitimation of experiences that do not fit the official framework, the demand that individuals reshape their inner lives to conform to institutional expectations. The believer who experiences the sacred differently from the prescribed form is not offered a new interpretation but a diagnosis: insufficient faith, spiritual immaturity, demonic influence. Her experience is not merely wrong but pathological. The system thus insulates itself from disconfirmation by translating all evidence against it into evidence of the objector's inadequacy.

Medical systems, for all their scientific credentials, exhibit remarkably similar structural features. This claim may seem counterintuitive: surely medicine, unlike religion, bases its authority on empirical evidence and rigorous testing rather than faith and tradition? The appearance of fundamental difference conceals a deeper homology. Medicine, like religion, claims privileged access to truths unavailable to ordinary people—truths distilled from years of professional training, guarded by institutions that define who is competent, who is safe, and who is allowed to speak. The white coat replaces the clerical vestment; the medical license replaces ordination; the diagnostic manual replaces the catechism. But the structure of authority remains constant.

Ivan Illich's *Medical Nemesis*, published in 1976 but more prescient with each passing decade, provides the most devastating analysis of medicine as an iatrogenic system—a system that generates the harms it claims to heal [5]. Illich distinguishes three levels of iatrogenesis: clinical (direct harm from medical interventions), social (medicalization of ordinary life), and cultural (destruction of traditional capacities for dealing with pain, suffering, and death). The third level is most relevant here: medicine does not merely treat illness but transforms the meaning of illness, appropriating experiences that were once integrated into cultural frameworks and redefining them as technical problems requiring professional management.

Thomas Kuhn's *Structure of Scientific Revolutions* undermines the naive view that medical knowledge accumulates through steady progress toward objective truth [3]. Kuhn shows that science operates within paradigms—comprehensive frameworks that determine what questions are worth asking, what methods are legitimate, and what counts as evidence. Normal science proceeds by solving puzzles within the paradigm; anomalies that resist solution are typically ignored or explained away rather than taken as evidence against the paradigm. Only when anomalies accumulate beyond a critical threshold does a paradigm shift become possible—and such shifts are not rational progressions but something more like religious conversions, involving gestalt switches in how practitioners see their entire field.

Implications for the therapeutic space

The implications for medicine are profound. Medical knowledge is not a transparent window onto biological reality but a paradigm-bound construction that incorporates assumptions about the body, the self, health, disease, and the proper relationship between expert and layperson. These assumptions are not neutral descriptions but normative commitments with significant social consequences. The biomedical model that dominates contemporary medicine treats the body as a machine, disease as mechanical dysfunction, and treatment as technical repair [14]. This model has achieved remarkable successes, but it has also generated systematic blind spots: it marginalizes social determinants of health, ignores the meaning of illness for sufferers, and devalues forms of healing that do not fit its mechanistic framework.

Michel Foucault's analysis of the 'clinical gaze' illuminates how modern medicine constructs its objects of knowledge [15]. The physician does not simply observe a patient; he constitutes the patient as a medical object through practices of examination, classification, and documentation. The patient's body becomes a text to be read, a puzzle to be solved, a case to be managed. The patient's own experience of illness-what Arthur Kleinman calls the 'illness narrative'-is systematically subordinated to the physician's disease framework [16]. The patient who insists on the validity of her own experience is labeled 'noncompliant,' 'difficult,' or 'lacking insight'-diagnostic categories that function to delegitimize resistance to medical authority.

The authority structures

Licensing boards and professional societies, ostensibly guardians of quality and public safety, function as ideological apparatuses that reproduce the system while appearing to regulate it. The medical board does not ask whether the paradigm is adequate; it asks whether the practitioner has adequately internalized the paradigm. Continuing education requirements do not encourage critical reflection on medicine's foundational assumptions; they ensure that practitioners remain current with developments within the accepted framework. Disciplinary proceedings rarely question the validity of standard practices; they punish deviations from those practices. The system perpetuates itself by producing practitioners who have been successfully socialized into its worldview.

Pierre Bourdieu's concept of 'symbolic capital' clarifies how professional credentialing functions [4]. The medical degree, the license, the board certification-these are not merely certifications of competence but markers of social position that confer authority to define reality. The physician's white coat is, in Bourdieu's terms, a 'symbolic good' that signifies membership in an elite group whose pronouncements carry special weight. The patient who questions the physician's judgment is not merely disagreeing with an individual; she is challenging the entire symbolic order that gives the physician's words their authority. Such challenges rarely succeed because the challenger lacks the symbolic capital to make her dissent count.

Erving Goffman's dramaturgical analysis of social interaction provides additional insight [17]. The clinical encounter is a performance in which roles are scripted, props are deployed, and impressions are managed. The physician performs expertise through technical vocabulary, confident bearing, and ritual procedures; the patient performs the sick role through appropriate deference and compliance. Both parties collaborate in maintaining a 'definition of the situation' that reinforces professional authority. Goffman's insight that all social reality is performative suggests that medical authority, like all authority, is an accomplishment rather than a given-but this accomplishment is invisible to participants who experience their roles as natural.

We the victims

The victims of self-serving ideological loops are always the same: those who trust too deeply, who assume that the authority before them is motivated by benevolence rather than self-preservation, who lack the social position or cultural capital to question what they are told. These are the 'poor uncritical believers'-not because they are intellectually deficient but because they occupy positions of structural vulnerability. The believer who has invested her entire identity in a religious community cannot afford the cognitive dissonance of questioning its foundations. The patient who depends on the healthcare system for survival cannot afford to alienate those who control her access to care.

Paulo Freire's Pedagogy of the Oppressed offers a framework for understanding how subordinate groups internalize the perspectives of their dominators [18]. Freire describes a 'banking model' of education in which knowledge is deposited into passive recipients who are expected to accept rather than question what they receive. Both religious instruction and medical education often operate according to this model: the believer or patient is positioned as an empty vessel to be filled with authorized content. Critical consciousness-the capacity to perceive social reality as constructed and therefore changeable-is systematically suppressed in favor of adaptation to existing structures.

The dependency generated by these systems is not merely psychological but material. Believers may lose family, community, and economic support if they deviate from orthodoxy. Patients may lose access to medications, treatments, or insurance coverage if they refuse to comply with recommended protocols. The threat of exclusion operates as a powerful disciplinary mechanism even when it is never explicitly invoked. People learn to self-censor, to suppress doubts, to perform compliance even when they inwardly resist. This internalization of external constraint-what Foucault calls 'discipline'-is the most effective form of social control precisely because it does not require external enforcement [19].

Invisible violence of the collective

The violence perpetuated by self-serving ideological systems is typically invisible because it operates through legitimate channels. This is what Johan Galtung calls 'structural violence': harm that results from social arrangements rather than direct aggression [20]. When a patient dies because she could not afford treatment, the death is structural violence. When a believer suffers psychological harm from religious teachings about sin and damnation, the harm is structural violence. Such violence is more difficult to perceive and resist than direct violence because it has no identifiable perpetrator-it is 'nobody's fault,' simply the way things are.

Slavoj Žižek's distinction between subjective and objective violence is helpful here [21]. Subjective violence is visible disruption of normal order-riots, crimes, wars. Objective violence is the background violence that maintains the normal order itself. The self-serving loops of religious and medical systems generate objective violence: they establish and sustain arrangements that systematically harm certain populations while benefiting others. This violence is invisible not because it is minor but because it has been normalized. We notice when a physician makes an obvious error; we do not notice when the entire medical system is structured in ways that perpetuate health disparities.

Religious systems have generated violence throughout history: crusades, inquisitions, pogroms, witch trials, honor killings, the abuse of children by clergy. These dramatic eruptions of violence are enabled by the background structural violence of doctrines that divide humanity into saved and damned, pure and impure, faithful and heretical. The ideology that justifies exclusion and hierarchy provides the conditions of possibility for physical violence even when it does not directly command it. Believers who sincerely desire only good become instruments of harm because they have internalized a framework that defines certain others as threats to cosmic order.

Medical systems generate their own forms of violence, often no less devastating for being bureaucratic rather than spectacular. The opioid crisis that has killed hundreds of thousands in the United States was enabled by a medical system that trusted pharmaceutical marketing over patient welfare, that defined pain as the 'fifth vital sign' requiring aggressive intervention, that punished physicians who deviated from prescribing norms [22]. The history of medicine includes forced sterilization, unethical experimentation on marginalized populations, the pathologization of homosexuality, the dismissal of women's pain as hysteria, and the ongoing racial disparities in diagnosis and treatment. These are not aberrations but logical outcomes of a system that concentrates power in professional elites and structurally devalues patient voices.

The most disturbing aspect of ideological violence is that it is typically committed by people who sincerely believe they are doing good. The inquisitor who tortures a heretic believes he is saving her soul. The physician who overrides a patient's expressed wishes believes he is acting in her best interest. The religious leader who shames a congregant for doubting believes he is protecting the community from spiritual danger. The medical board that revokes a license for unorthodox practice believes it is protecting the public from charlatans. Sincerity provides no protection against ideological capture; indeed, it may intensify capture by removing the possibility of cynical distance.

Hannah Arendt's concept of the 'banality of evil,' developed in her analysis of Adolf Eichmann, illuminates this phenomenon [23]. Eichmann was not a monster motivated by sadism but a bureaucrat motivated by obedience, career advancement, and the desire to do his job well. The horror of his crimes lay precisely in their routinization, their bureaucratic normalcy. Religious and medical systems rarely produce Eichmanns, but they routinely produce functionaries who implement harmful policies without perceiving themselves as agents of harm. The banality of institutional violence is that it can be committed by ordinary people who are simply following procedures.

The paradox behind the good motive

This is the paradox: the more certain the ideology, the more dangerous its self-regeneration. Systems that cannot question themselves must ultimately silence those who question them. The religious tradition that claims infallible access to divine will cannot tolerate theological innovation; the medical system that claims to represent objective science cannot tolerate challenges to its paradigm. Both must defend not merely particular beliefs but the meta-belief that they have privileged access to truth. This meta-belief is the load-bearing element of the entire ideological structure; if it falls, everything falls. The system therefore mobilizes all its resources-rhetorical, institutional, economic, psychological-to maintain it.

To break the self-serving loop requires not rebellion but humility-the humility to acknowledge that both religion and medicine operate within interpretive frameworks, not absolute truths. This is a difficult demand because humility threatens the symbolic capital of credentialed elites and the psychological security of dependent followers. The physician who admits the limitations of medical knowledge risks losing authority; the religious leader who acknowledges the historical contingency of doctrine risks losing followers. Yet such admissions are the precondition for genuine healing and genuine spiritual life.

Jürgen Habermas's theory of communicative action suggests one path forward [24]. Habermas argues for an 'ideal speech situation' in which participants in discourse are free from domination and oriented toward mutual understanding rather than strategic manipulation. Such a situation is counterfactual-it never fully obtains-but it can serve as a critical standard against which actual practices are measured. Both religious and medical encounters could be transformed by movement toward more communicative, less hierarchical relationships. The physician who genuinely listens to the patient's illness narrative, who acknowledges uncertainty, who invites collaboration rather than commanding compliance-such a physician has not abandoned expertise but has resituated it within a more democratic framework.

Emmanuel Levinas's ethics of the face provides another resource [25]. For Levinas, the encounter with the face of the Other is the primordial ethical moment-the moment when I am confronted with a vulnerability and a demand that cannot be reduced to my categories. The face of the suffering patient, the questioning believer, is not a problem to be solved but a call to be answered. Responding to this call requires putting aside the apparatus of professional expertise and institutional authority to meet the Other as Other. This is not anti-professionalism but a different kind of professionalism-one that recognizes the limits of role and the priority of relationship.

The alternative to ideological humility is a culture of violence-symbolic, psychological, and sometimes literal-perpetuated by collectives that sincerely believe they are doing good. This is the tragic structure of ideological systems: they harm most when they are most confident, help most when they are most humble. The religious tradition that holds its truths lightly, that remains open to prophetic criticism, that acknowledges its historical conditioning-such a tradition can be a source of genuine wisdom. The medical system that recognizes the limits of its paradigm, that honors patient autonomy, that remains open to alternative frameworks-such a system can be a source of genuine healing.

The conventions of truth

In the end, there is no final truth 'out there.' There are only stories, models, frameworks, metaphors, and provisional agreements that communities elevate to the status of truth. This is not a counsel of despair but an invitation to responsibility. If truth is not given but constructed, then we are responsible for how we construct it. If institutions are human creations, then we can recreate them. If ideology

blinds, then critique can restore sight. The task is not to find the one true religion or the one true medicine but to build communities of inquiry that remain vigilant against the seductions of certainty, that protect the vulnerable from the violence of the righteous, that hold power accountable to those over whom it is exercised.

The responsibility of any healer, teacher, or leader is not to cling to authority but to continually examine it; not to demand obedience but to cultivate shared meaning; not to weaponize knowledge but to humanize it. When ideology becomes aware of its own limitations, it becomes a tool for liberation. When it forgets those limitations, it becomes a trap. The self-serving loop can be broken-but only by those with the courage to question the systems that have formed them, the honesty to acknowledge their own complicity, and the humility to recognize that their knowledge, however hard-won, is always partial, always perspectival, always open to revision.

Conclusion

The believers and patients caught in ideological traps are not passive victims awaiting rescue; they possess, however suppressed, the capacity for critical consciousness that can recognize and resist domination. Freire was right that liberation cannot be bestowed but must be achieved through struggle-the struggle of those who have been objects to become subjects, who have been spoken about to speak for themselves [18]. The role of the critical intellectual, the prophetic voice, is not to lead this struggle but to create conditions in which it becomes possible-to name the ideology, to expose the loop, to demonstrate that what appears inevitable is in fact contingent and changeable. This essay is offered in that spirit: not as final truth but as provisional analysis, not as authoritative pronouncement but as invitation to dialogue, not as system but as critique of systems that forget their own humanity.

Bibliography

1. Foucault M. "Discipline and punish: The birth of the prison". Vintage Books (1977).
2. Berger PL and Luckmann T. "The social construction of reality: A treatise in the sociology of knowledge". Anchor Books (1966).
3. Kuhn TS. "The structure of scientific revolutions". University of Chicago Press (1962).
4. Bourdieu P. "Distinction: A social critique of the judgement of taste". Harvard University Press (1984).
5. Illich I. "Medical nemesis: The expropriation of health". Pantheon Books (1976).
6. Rorty R. "Philosophy and the mirror of nature". Princeton University Press (1979).
7. Wittgenstein L. "Philosophical investigations". Basil Blackwell (1953).
8. Althusser L. "Ideology and ideological state apparatuses". In: Lenin and philosophy and other essays. Monthly Review Press (1971): 127-186.
9. Gramsci A. "Selections from the prison notebooks". International Publishers (1971).
10. Durkheim É. "The elementary forms of religious life". Free Press (1912/1995).
11. Geertz C. "The interpretation of cultures". Basic Books (1973).
12. Weber M. "Economy and society". University of California Press (1922/1978).
13. Troeltsch E. "The social teaching of the Christian churches". Westminster John Knox Press (1912/1992).

14. Engel GL. "The need for a new medical model: A challenge for biomedicine". *Science* 196.4286 (1977): 129-136.
15. Foucault M. "The birth of the clinic: An archaeology of medical perception". Vintage Books (1963/1994).
16. Kleinman A. "The illness narratives: Suffering, healing, and the human condition". Basic Books (1988).
17. Goffman E. "The presentation of self in everyday life". Anchor Books (1959).
18. Freire P. "Pedagogy of the oppressed". Continuum (1970).
19. Foucault M. "The history of sexuality, volume 1: An introduction". Vintage Books (1978).
20. Galtung J. "Violence, peace, and peace research". *Journal of Peace Research* 6.3 (1969): 167-191.
21. Žižek S. "Violence: Six sideways reflections". Picador (2008).
22. Quinones S. "Dreamland: The true tale of America's opiate epidemic". Bloomsbury Press (2015).
23. Arendt H. "Eichmann in Jerusalem: A report on the banality of evil". Viking Press (1963).
24. Habermas J. "The theory of communicative action". Beacon Press (1984).
25. Levinas E. "Totality and infinity: An essay on exteriority". Duquesne University Press (1961/1969).

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