

Thematic analysis

Power and Active Inference: Thematic Analysis and Formalization

Precision and Certainty

Conceptual Definition: *Precision* in this context refers to the degree of confidence or certainty in beliefs, predictions, or goals. Power often hinges on controlling the level of certainty people have in particular ideas or outcomes. When a particular worldview or policy is treated as highly certain (high precision), it strongly guides perception and action, minimizing doubt and alternative interpretations. In social power terms, an authority that can instill unwavering confidence in its directives wields influence because people act as if those directives are unquestionably correct. Conversely, uncertainty (low precision) can weaken influence, as individuals become open to alternative views or behaviors.

Theoretical Insights:

- **Active Inference (Cognitive Precision as Influence):** In active inference, precision is the weight (inverse uncertainty) assigned to predictions or goals, modulating their impact on decisions. Power dynamics can be viewed as a competition between narratives or policies for high precision weighting. For example, a higher-level goal that is imbued with greater precision will dominate behavior by “dampening” lower-level competing impulses. In other words, a powerful narrative or goal is one that people hold with strong certainty, so it heavily “*precision-weights*” their policy selection and effectively biases what actions are taken. This idea is echoed in Pezzulo *et al.* (2018), where goals with higher precision (confidence) exert stronger top-down influence, akin to greater **influence** in a hierarchy. Power, from this view, is the ability to tune the confidence landscape: by increasing the precision of certain beliefs (e.g. propaganda making an ideology feel indisputable), a power-holder ensures those beliefs drive behavior. Conversely, sowing doubt (lowering precision) in a rival’s claims can undermine their influence.
- **Structuring “Truth” and Naturalization:** Classic social theorists note that power isn’t only exerted in open coercion but in shaping what is considered *true* or *normal*. Foucault’s notion of a “*regime of truth*” captures how defining what is accepted as truth is a major source of power. The ability to cement certain knowledge as beyond question is essentially the imposition of certainty. Those in power often promulgate narratives with such confidence that they become taken-for-granted facts. Lukes likewise argues that “*power is at its most effective when least observable*,” i.e. when it shapes beliefs and preferences so thoroughly that people accept their circumstances without question. For instance, Lukes cites J.S. Mill’s observation that Victorian socialization made women “*willing*” rather than “*forced*” slaves – through education, women were convinced that

their subordinate role was natural. This reflects an imposed certainty: the dominated come to *know* their social position as the natural order. Pierre Bourdieu's concept of *symbolic violence* similarly describes how structures become inscribed in the body and mind, causing the dominated to perceive the social world as given and inevitable. In effect, power secures compliance by **instilling a high-confidence belief** that the status quo is justified or unchangeable.

- **Power to Mislead (False Certainty):** Lukes introduces the idea that power includes a “*power to mislead*,” producing what he calls false consciousness. This occurs when those in power foster cognitive biases, propaganda, or ideologies that lead people to firmly believe in ideas that actually run counter to their real interests. Such belief distortion is potent because it creates *false certainty* – people may be **highly confident** in an understanding of the world that ensures their own subordination. Lukes notes this process often *naturalizes* contingent social arrangements, meaning arbitrary inequalities come to be seen as normal facts of life. Importantly, this is usually not experienced as overt coercion; rather, it's an invisible alignment of perception in the minds of the dominated. They *willingly* act in ways that sustain the power structure, because their very perception of reality has been shaped. As a result, **certainty itself becomes a tool of domination**: whoever can dictate the parameters of truth and doubt can profoundly influence others' behavior.

Attention and Capital Allocation

Conceptual Definition: This theme concerns how power controls **what people pay attention to** and how resources or *capital* are distributed toward certain ends. Attention is a finite cognitive resource – individuals and societies cannot focus on everything at once. Power involves capturing and directing attention to specific issues, narratives, or stimuli, thereby neglecting others. Meanwhile, **capital** (whether economic, social, cultural, or cognitive) represents resources that can be invested to achieve goals. Power dynamics determine where these resources flow: for instance, funding (economic capital) and prestige (symbolic capital) gravitate toward certain actors or ideas, amplifying their influence. In essence, those who can allocate attention and capital effectively can shape what is valued, discussed, or acted upon in a society.

Theoretical Insights:

- **Attention as Power (Agenda-Setting):** Controlling attention is a classic form of power. Bachrach & Baratz's “second face” of power is essentially about agenda-setting – influencing **what is even debated** by focusing attention on some topics and excluding others. By structuring the agenda, powerful groups make some issues salient and **render others invisible**, preventing challenges from arising. Modern analyses echo this: if *collective attention* can be steered, one can influence collective behavior. For example, in the media age, political or corporate actors who dominate news cycles and social

media feeds effectively hold power by keeping public attention on narratives favorable to them. As an active-inference-inspired analysis puts it, when “*collective attention [is] controlled by agents already benefiting from dominant narratives,*” it can lead to echo chambers and misinformation – all in an effort to **retain attention and therefore power**arxiv.org. By monopolizing attention, these actors ensure alternative viewpoints don’t gain traction, maintaining their influence.

- **Forms of Capital (Bourdieu’s View):** Pierre Bourdieu expands the notion of capital beyond money, highlighting how **social**, **cultural**, and **symbolic** capital confer power in different arenas. Social capital (networks and connections) gives influence through who you know; cultural capital (education, credentials, knowledge) gives authority and credibility; symbolic capital (prestige, honor, recognition) garners deference. Bourdieu’s insight is that power often “*hides in the form of capital*”. For example, a professor’s academic credentials and status (cultural and symbolic capital) command students’ attention and respect, not because of force, but because the professor is recognized as an authority. Importantly, these forms of capital tend to accumulate: those who have them can leverage them to gain more (e.g. using wealth to influence politics, or using prestige to draw more followers). Power thus involves **allocating capital** to reinforce existing advantages – who gets funding, whose knowledge is accredited, whose voices are amplified. In society, dominant groups channel resources (financial, informational, human capital) toward projects and narratives that serve their interests, thereby perpetuating their dominance.
- **Cognitive Resources and “Attention Capital”:** In cognitive terms, attention itself can be treated as a resource that agents allocate. Under active inference, attention is the process of weighting certain sensory inputs or hypotheses with higher precision. We can think of **precision allocation as distributing cognitive capital** to different predictions. A recent analysis frames this as distributing “resources... through the allocation of precision (akin to confidence or clarity of purpose)”. If an individual or institution can influence where people invest their attention (i.e. which cues have high precision or salience), they are effectively allocating cognitive capital. For instance, a social movement that captures public attention on an injustice is reallocating societal focus (and subsequent resources) to that issue, thereby gaining power to change it. Similarly, a tech platform that uses algorithms to keep users’ attention is exercising power by directing a valuable resource (user engagement) in ways that benefit the platform (often described as the “attention economy”). Power-holders often command both **material capital and attention capital** – e.g. controlling media (attention) and wealth (economic capital) together. This dual control allows them to prioritize certain goals and suppress others. Under active inference analogies, one might say powerful agents or systems perform *precision modulation* at scale: they boost the precision (confidence/visibility) of information that favors them and dampen precision on inconvenient information, thus biasing collective [perception and decision-making](#). Ultimately, *what people attend to* will determine *what they act on* – hence by guiding attention and capital, power guides

society's direction.

Conflict and Motivational Salience

Conceptual Definition: This theme examines power in the context of **conflict** – overt clashes of interest or will – and how power influences what becomes *motivationally salient* enough to trigger conflict. In classical terms, power is often most visible when conflicts arise: who prevails when there is a disagreement or struggle? However, power also operates by shaping **salience** – determining which potential conflicts *seem worth fighting over* (or even noticeable at all). *Motivational salience* refers to how strongly something grabs our motivation or emotional impetus. A grievance might exist, but if people don't feel strongly motivated by it (because power has diminished its salience), they won't contest it. Thus, power can manifest in two ways: by **winning conflicts** through superior force or strategy, and by **preventing conflicts** from materializing in the first place (by managing perceptions, values, and priorities).

Theoretical Insights:

- **Power as Winning Conflicts (One-Dimensional View):** A straightforward definition comes from Robert Dahl: *"A has power over B to the extent that A can get B to do something B would not otherwise do."* This classic view equates power with **direct control in conflict** – if A's will conflicts with B's, and A consistently prevails (changing B's behavior against B's initial preference), then A is powerful. Dahl's pluralist studies of community politics looked at **who wins when interests collide** (e.g. which interest group wins a policy decision). In this perspective, conflicts are overt and zero-sum; power is the capacity to *compel* others, typically through resources, coercion, or authority. For instance, if a labor strike is a conflict between workers and management, and management forces workers to concede (perhaps via legal injunctions or hiring replacements), management has exercised power in the Dahlian sense. This view highlights observable conflicts and treats **victory in contest** as the measure of power.
- **Suppressing Conflict (Two-Dimensional View):** Critics like Bachrach and Baratz argued that power is also exercised in **less visible ways**: by controlling what conflicts *never reach the stage of decision*. They introduced the concept of *"nondecision-making"* and the *mobilization of bias* in institutions. Essentially, power can keep certain issues off the table, so no open conflict occurs. For example, a city council might never debate a policy that threatens a business elite's interests because that elite uses influence to prevent it from appearing on the agenda. Here, power is about **shaping salience** – making some potential grievances *non-salient* or illegitimate to raise. The result is latent conflicts remain quiescent. As E.E. Schattschneider put it, *"Some issues are organized into politics while others are organized out."* The two-dimensional view thus recognizes power in the **suppression of conflict**: if you can avoid challenges by ensuring people don't rally around an issue, that is a subtler form of control.

- Shaping Desires to Avoid Conflict (Three-Dimensional View):** Steven Lukes extends this further: the **third dimension** of power involves influencing people's wants and perceptions such that *they do not even realize they have a grievance*. Power, at its deepest, can "shape people's desires and beliefs" so that potential conflicts never arise because the underlying dissent is erased. According to Lukes, "*domination is not just about external coercion. It also involves the imposition of internal constraints*", leading the dominated to "*willingly comply with a system that works against their own 'real interests'*". In this scenario, power has so thoroughly managed motivational salience that people are motivated **not** to resist; their values align with the status quo. For example, if workers have internalized a belief that unions are harmful or that their boss knows best, they may feel no motivation to strike even if objectively their wages are unfair – power has muted the salience of that conflict. This aligns with Antonio Gramsci's notion of **hegemony**, where cultural leadership by elites causes subordinate groups to consent to their domination, perceiving it as reasonable. Thus, from Lukes' perspective, the *absence* of conflict can actually indicate a **supreme exercise of power** – not peace due to harmony, but peace due to one side's successful suppression of the other's will. Power is exercised when A influences B's preferences so that B *willingly does what A wants*, nullifying any opposition before it begins.
- Motivational Salience and Resistance:** From a psychological angle, conflict requires that an issue become salient enough to outweigh the costs of acting. Michel Foucault famously noted, "*Where there is power, there is resistance*," implying that power and resistance co-exist. However, resistance only coalesces under certain conditions. James C. Scott's work on "hidden transcripts" shows oppressed groups often feel grievances but express them offstage; open conflict erupts only when contextual shifts make resistance feasible or salient. Power can delay this by keeping people in a state of **learned disinterest or fear**. On the flip side, when powerholders overstep and make a broad range of issues salient (e.g. an oppressive policy that suddenly touches everyone's daily life), they may inadvertently unify opposition. The timing and form of conflicts are thus deeply tied to how power heightens or dampens different motivations. For instance, a government might appease the public with small concessions (reducing the salience of economic inequality) or invoke external threats to redirect motivational salience toward a common enemy, thereby defusing class conflict. These maneuvers illustrate power's role in **steering motivations**: deciding what people find urgent or worth contesting. In active inference terms, one could say power adjusts the precision of certain preferences – making some potential goals (resistance, rebellion) low-precision and thus unlikely to be pursued, while making compliance feel like the high-precision default. In sum, conflict is not just a test of power but also a choice shaped by power: by the time A and B openly clash, a great deal of power may already have been exercised to determine whether B is even motivated to fight and how that conflict is framed.

Coherence and Shared Generative Models

Conceptual Definition: This theme deals with how power relates to **social coherence** – the alignment of beliefs, values, and expectations within a group – and the idea of groups sharing a *generative model*. A *generative model* (in cognitive science terms) is an internal model an agent uses to predict and make sense of the world. When people share generative models, they have common priors, narratives, and understandings; this results in coordinated behavior and mutual predictability. **Coherence** here means that a society or group “makes sense” together – members largely agree on the social reality (e.g. what is true, what is important, how one should act). Power can be both a cause and effect of such coherence. On one hand, powerful forces can **propagate a shared worldview**, increasing coherence (think of a dominant culture or ideology that everyone buys into). On the other hand, once a coherent set of shared models is in place, it **reinforces power structures** by making social interactions smooth and predictable (people know their roles and expectations, often to the benefit of those in power).

Theoretical Insights:

- **Common Sense and Social Order:** Both Lukes and later theorists emphasize that power often works by **structuring the “common sense”** of a society. That is, power establishes the taken-for-granted framework that people use to interpret their world. When everyone shares this framework (a coherent generative model of social reality), overt conflict diminishes and social order is maintained. Lukes’ third dimension of power essentially creates coherence by aligning people’s internal models with the status quo. In the words of Lukes (2005), this aligns with Foucault’s and Bourdieu’s insights that power operates by shaping the *doxa* – the realm of the self-evident. Bourdieu’s term *doxa* refers to the set of fundamental beliefs that are beyond discussion (the “common sense” of society). A doxic social order is highly coherent: everyone from the elite to the oppressed accepts basic assumptions (for example, the value of money, the legitimacy of certain institutions, gender roles, etc.) as natural. This shared generative model means people predict similar outcomes and behave in line with those expectations, reproducing the social patterns. For the powerful, such coherence is golden – it means **fewer challenges** and a stable environment in which their interests are continually served.
- **Shared Narratives as Generative Models:** A practical way coherence manifests is through **shared narratives and norms**. When a narrative (e.g. “our nation stands for freedom and democracy”) is internalized by millions, it acts like a common generative script: people anticipate how others will act and how they *should* act in light of that narrative. This synchronization of expectations greatly amplifies collective power. As one source notes, “*precision in communication*” – essentially the reliability and clarity of shared information – “*stabilizes shared narratives within a group,*” establishing a foundation of **mutual expectations and cultural norms**. In such a group, individuals trust each other’s behavior to be predictable and norm-conforming, which subtly **empowers everyone** to coordinate effectively. For example, if a community shares a strong norm of mutual aid, a member in need can predict others will help (and others expect themselves would be helped), enabling concerted action in crises. This kind of coherence can be deliberately cultivated by leaders or movements – consider how

revolutionary leaders spread a shared model of society (a vision of a just society) among followers, aligning their actions. Anthropologists speak of “*collective representations*” (Durkheim) or “*imagined communities*” (Anderson) as similar ideas: a power-holding narrative that unites individuals into a functional whole.

- **Active Inference and Shared Priors:** In active inference terms, a shared generative model means agents have **shared priors or hyperpriors** about states of the world and each other. They essentially agree on the “model” that is generating social outcomes. This leads to what might be called *synchronized predicting*. When agents’ models are aligned, their interactions yield few surprises; each fulfills the others’ expectations, reinforcing the model. This is a self-stabilizing loop. For instance, if everyone shares a generative model that “authority figures are to be obeyed,” subordinates expect instructions and comply, while authorities expect compliance and give instructions accordingly – and the interaction confirms everyone’s expectations. Such alignment is a powerful asset: it is the basis of **trust, legitimacy, and coordination**. One analysis describes how *mutual expectations* embedded in a cultural system *empower individuals by embedding them in a system of predictable social interactions*. When everyone knows the rules of the game (even implicitly), they can cooperate or at least coexist with minimal friction. This coherence is not always benign – it can enforce rigid hierarchies – but it does provide **order**. Moreover, with shared generative models, groups can act almost like single entities (a concept akin to “group minds” or strong organizational culture). We see this in highly disciplined institutions (the military, for example, instills a shared model of command and duty, enabling coordinated action under stress). Power both produces this coherence (through socialization, propaganda, education) and benefits from it (as coherent groups are easier to govern and can mobilize en masse when needed). In summary, *power and coherence are mutually reinforcing*: power imposes a common model, and a common model in turn solidifies power by ensuring everyone behaves in ways that reproduce the intended order (sharing a consistent worldview and behavioral baseline keeps the group predictable and united).

Enculturation and Norm Stability

Conceptual Definition: *Enculturation* is the process by which individuals learn and internalize the values, norms, and practices of their culture or social group. Through enculturation, people come to *embody* their culture’s expectations – they feel what is normal, right, or wrong according to their community. **Norm stability** refers to the persistence of social norms (rules of behavior) over time. Together, this theme addresses how power is exercised by **creating durable norms** and ensuring people internalize them (so that these norms remain stable across generations). Enculturation is a subtle yet profound form of power: rather than forcing behavior externally, it implants a regulatory framework inside individuals (in their preferences and identities). When norms are stable – widely accepted and reproduced without overt enforcement – power operates “in the background,” as people police themselves and each other according to cultural expectations.

Theoretical Insights:

- **Internalizing Social Structures (Bourdieu's Habitus):** Pierre Bourdieu provides a powerful account of enculturation through his concepts of *habitus* and *symbolic violence*. The **habitus** is a set of durable dispositions an individual acquires through socialization – essentially, the ingrained habits of thought, taste, and behavior shaped by one's upbringing and social context. These dispositions reflect the social structure: for example, a working-class habitus might include deference to authority and a sense of one's own limitations, whereas an elite habitus includes confidence and entitlement. Importantly, the habitus causes people to **reproduce the very structure** that produced it, often unconsciously. Bourdieu calls the gentle imposition of the dominant culture's values onto everyone *symbolic violence*: a “*gentle, invisible form of coercion*” that **goes unrecognized as power**. Through symbolic violence, social hierarchies (class, gender, etc.) are inscribed in the bodies and minds of the dominated, who then “*perceive their condition as natural*”. This is enculturation par excellence – the dominated apply the dominant categories to themselves, effectively consenting to their position. The result is extremely stable norms: people follow them not because someone is holding a stick over them, but because “*that's just how it is done*”. For instance, if society enculturates the norm that one must respect one's elders or superiors, individuals will often obey authority figures automatically as a matter of habit. Such norms can persist over centuries (consider caste practices in traditional societies or gender roles that long went unquestioned) precisely because they are **embedded in practice and perception**, not dependent on constant coercion.
- **Willing Compliance and “Real Interests”:** Lukes' analysis of power's third dimension also centers on enculturation-like effects. He discusses how domination often entails people *willingly complying* with systems that harm them, because their *beliefs and preferences have been shaped* by those in power. The Victorian gender order again: women were culturally educated (enculturated) to be devoted, submissive, and to find fulfillment in serving men (as J.S. Mill observed). Through this cultural molding, overt force became largely unnecessary – the norm of female submissiveness was stable and self-enforced by both men and women. Lukes notes this involves a notion of *false consciousness* – people's **perception of their own interests is distorted** so they align with the status quo. He carefully reframes “false consciousness” not as an insult to people's rationality, but as an outcome of “*the power to mislead*”. In other words, social norms and ideologies misdirect people's understandings of what is possible or desirable. Crucially, he emphasizes that this internalized power is never absolute: people are not “*cultural dopes*” completely incapable of recognizing oppression. They may consciously conform to norms for lack of better options (knowing the risks of defiance). Still, the enculturated norms greatly raise the cost of dissent and make the existing order seem like the only game in town. **Norm stability** results from this dynamic: as long as the power-influenced culture provides a framework that people navigate for security and meaning, most will continue to play by its rules. It often takes major shocks or changes (e.g. new education, outsider influence, economic shifts) to destabilize such deep

cultural norms. Bourdieu himself acknowledges that only through *reflexive sociology* or accumulation of alternative forms of capital can dominated groups break out of imposed habitus and transform norms. Enculturation, therefore, is a key mechanism by which power achieves **durable dominance** – it breeds generation after generation that “automatically” see the world in ways that uphold the existing power structure.

- **Deontic Value and Self-Governance (Active Inference View):** We can cast enculturation in active inference terms by noting that culture supplies individuals with **strong priors about appropriate behavior** – essentially *deontic values*, or beliefs about what one *ought* to do. These take the form of deeply learned priors that certain actions are good/allowed and others are bad/forbidden. Because they are held with high precision, these cultural priors effectively “*lock in*” certain policies and rule out others (a form of **policy compression** where an agent’s repertoire of possible actions is reduced to norm-compliant ones). For example, in a culture with a strong norm of dietary restriction, an individual may simply never even consider eating a taboo food – their generative model has virtually zero probability for that action. This is **self-governance via enculturation**: the policing of behavior has been internalized. One could say each person carries an internalized “society” (a set of social sanctions and expectations) within their cognitive model. The stability of norms then corresponds to the **equilibrium of these internal models across the population**. If everyone shares similar deontic constraints, the culture is in a steady state – any deviance by one agent creates a prediction error for others, leading to social correction (gossip, punishment, etc.), which pushes the deviant back in line or ostracizes them. In active inference terms, the society functions like a coupled system where each individual’s *free energy* (i.e. social discomfort or surprise) increases when norms are broken, motivating actions to restore conformity. This dynamic creates a **Markov blanket** around cultural practices: the boundary of acceptable behavior is maintained by constant flows of feedback at that boundary (e.g. disapproving looks or approval signals). The concept of a Markov blanket can be applied here to say that the culture itself (as an external network of institutions, traditions, symbols) forms a blanket that both **constrains individuals** and is **maintained by individuals**. Enculturation is the process of wrapping individuals in this blanket, so to speak, so that their internal states align with the collective norms. Once fully enculturated, a person will generate behavior that largely conforms, contributing to the **homeostasis of the social order**. In summary, power exercised through enculturation implants “*auto-pilot*” norms in people. These norms have remarkable stability, as they are continuously reinforced by social interactions and by each person’s own expectations. Only when external or internal pressures make the *cost (free energy) of adhering to norms higher than breaking them* will norm stability falter – which is why enduring power systems often seek to manage those very pressures and keep norm violations rare or unthinkable.

Temporality of Power

Conceptual Definition: Power unfolds and is understood across **time**. The temporality of power refers to how power is gained, maintained, and lost over time, as well as how power allows agents to influence future states of the world. Key aspects include the **durability** of power arrangements (do they persist for long periods or change quickly?) and the **time horizon** of powerful vs. less powerful actors (for example, a state might plan decades ahead, whereas individuals plan day-to-day under immediate pressures). Temporality also covers historical path-dependence – how past power dynamics set the stage for present conditions – and the ability of power to project itself into the future (through things like succession planning, long-term policies, institutional memory). In short, power has a timeline: understanding who is powerful and why often requires a historical view, and exercising power effectively often involves shaping future possibilities, not just present actions.

Theoretical Insights:

- **Acquisition vs. Maintenance (Machiavelli's Insight):** Niccolò Machiavelli, in *The Prince*, famously discusses not only how to *acquire* power but how to *maintain* it over time. He emphasizes that power is inherently unstable unless the ruler takes continuous strategic action – through fear or love, alliances, or elimination of rivals – to keep hold of it. The temporality here is one of constant vigilance: “*by any means necessary*,” the prince must preempt future challenges. This reflects a basic temporal dynamic of power: **the moment of seizure is only the beginning**; true power is demonstrated by longevity and the ability to weather changing circumstances. A regime that cannot adapt to the times (say, failing to succession-plan or to reform when conditions change) will eventually crumble. Thus, Machiavelli shifts our focus to power as a process over time, not a one-time event. Power must be reproduced continually (e.g. through rituals of authority, displays of strength, or responsive governance) or it decays. As a crude example, consider how some corporations or dynasties survive for centuries by evolving their strategies, whereas others peak and collapse quickly – the difference often lies in *temporal strategy*.
- **Legitimation and Stability:** Max Weber's work introduces the idea that the **legitimacy of power** is key to its stability over time. Illegitimate power (rule by naked coercion) tends to be brittle and short-lived, because it faces constant resistance or needs continuous force to uphold. By contrast, when power is perceived as rightful (legitimate authority), it converts into what Weber calls *Herrschaft* (domination that is accepted). Legitimate power relations can become remarkably **enduring**, forming stable institutions that outlast any individual. Weber's typology of authority (traditional, charismatic, rational-legal) each highlights a temporal aspect: *traditional* authority (like a monarchy or a cultural norm) links power to an immemorial past – “it has always been this way” – so its temporal strength is in continuity; *charismatic* authority is often revolutionary but transient – it depends on the short-lived magnetism of a leader and must routinize into tradition or bureaucracy to survive; *rational-legal* authority (like modern states) embeds power in timeless laws and offices, giving it a sustainable structure. In all cases, achieving consent (legitimation) turns power into a marathon rather than a sprint. A telling quote from Arendt encapsulates this: “*Power needs no justification... what it does*

need is legitimacy.” Justification is about the present argument, but legitimacy is about an ongoing condition – a reservoir of trust and belief that can carry power through crises. A regime with deep reserves of legitimacy can survive shocks (e.g. a bad economy or scandals) because people give it the benefit of the doubt; one without legitimacy may topple at the first crisis. In effect, legitimacy is **the time-binder of power**, transforming momentary coercion into lasting authority.

- **Power as Creating Future Possibilities:** A forward-looking view of power asks: how does possessing power allow one to **shape the future**? Modern discussions, especially in an information age, describe power in terms of controlling *potential* and *options* rather than just immediate acts. One recent framing in an active-inference context is to call power “*possibilistic power – i.e., the creation of the future.*”arxiv.org. This highlights that powerful agents don’t just react to the present; they actively **design future state spaces**. For example, a government implementing long-term educational policy is exercising power temporally: it is planting seeds that will bear fruit in decades (an educated populace that maintains the country’s power). Corporations invest in R&D or brand loyalty to secure their future market dominance. Even on an interpersonal level, a person with power (say, extensive social connections) can anticipate and influence events (like arranging opportunities for allies) that someone with fewer connections cannot. In active inference terms, having power might allow an agent to **minimize expected free energy over a longer time horizon** – they can afford to make short-term sacrifices for long-term gain because their position is secure enough. Less powerful agents often discount the future heavily; they must focus on immediate survival or short-term rewards (a concept akin to higher temporal discounting). Powerful actors, by contrast, can engage in “**deep temporal**” strategies: shaping not just immediate outcomes but the rules of the game that will govern tomorrow. For instance, setting precedents or building institutions that will channel behavior of others down the line. This temporal dimension is evident historically: colonial powers didn’t just win battles (present power), they imposed new education systems and borders (future-shaping power) that would persist even after their direct rule ended.
- **Historical Trajectories and Path-Dependence:** The temporality of power also reminds us that *how* power is exercised and distributed now is the result of a long history. Power relations have **memory**. For example, the current economic power of certain nations or classes often traces back to earlier conquests or innovations that gave them a head-start. Once established, power often begets more power (positive feedback over time) – e.g. wealth generates investment returns, political influence helps rewrite laws to further entrench that influence. This leads to *path-dependent* outcomes: small advantages or events in the past can snowball into massive differences in the present. Conversely, great powers can decline over time if new challenges emerge that they fail to adapt to (think of empires that gradually fell due to complacency or shifting technology). In analyzing power, therefore, one must take a temporal lens: **when** and **for how long** has an actor been powerful? Are we looking at a transient spike or a durable regime? What trends or cycles are at play (for example, the rise and fall of great powers,

or the way social movements gain momentum then face backlash)? Power is dynamic. Even stable-looking systems (say, a dominant political party) exist in time – they had to establish themselves and must manage succession or renewal to avoid decay. Hannah Arendt pointed out that **violence** can deliver quick results but cannot create a lasting power structure; it burns out if not transformed into legitimacy and institutions. Thus time is the ultimate test of power: *Can this influence persist and reproduce itself?* Enduring power usually relies on **institutionalization, cultural embedding, and adaptability** over time. To summarize, the temporality of power highlights planning, patience, and historical momentum as critical facets of influence. Power is not static; it's a movie, not a snapshot – and those who understand its temporal dimension can turn short-term authority into lasting dominance (or, in contrast, short-circuit a seemingly invincible power by targeting its long-term sustainability).

Legitimacy and Consent

Conceptual Definition: *Legitimacy* is the recognized right to exercise power – it exists when those subject to power **accept it as proper and justified**. *Consent* is the willing compliance and endorsement by the governed or followers, as opposed to compliance driven by fear or coercion. When power is legitimate, people obey orders or follow leadership because they **believe in the authority's legitimacy** (whether due to tradition, law, charisma, or moral rightness), not just because they are forced to. This consent can be explicit (voting, pledges of loyalty) or implicit (quiet obedience, social cooperation). Legitimacy and consent form a feedback loop: legitimacy fosters genuine consent, and widespread consent in turn reinforces legitimacy. Power that lacks legitimacy must rely on brute force or material incentives alone, which is costly and often unsustainable. Truly solid power systems convert raw power into authority – a stable form where people *want* to follow the rules.

Theoretical Insights:

- **Weber's Distinction – Power vs. Authority:** Max Weber drew a clear line between mere power (which can be coercive or based on raw advantage) and *legitimate authority*. He noted that “*power is not inherently legitimate*”; only when power is clothed in a belief in its rightness does it become authority (Herrschaft). He identified three pure types of legitimate authority: **traditional** (based on custom – e.g. a king's rule by hereditary right), **charismatic** (based on personal qualities and followers' devotion – e.g. a prophet or revolutionary leader), and **legal-rational** (based on formal rules – e.g. an elected official or a bureaucratic office). Each of these secures consent in a different way – through habit and lineage, through emotional allegiance, or through rule of law – but all serve to transform the relationship so that subordinates *voluntarily comply*. Weber emphasized that legitimacy **stabilizes power**: it turns what might be momentary dominance into an accepted, continuous domination. For example, a military junta may seize power by force (power without legitimacy), but if it manages to hold elections or invoke nationalistic charisma to gain public support, it can transition into something

people accept (authority). When people perceive power as legitimate, they internalize a duty to obey; as Weber notes, it *“induces obedience because people believe it is proper to obey”*. This belief-based obedience is less contingent and fickle than obedience obtained at gunpoint or bought with money – it is rooted in values and trust, which endure unless that trust is broken.

- **Arendt – Power Requires Legitimacy and Collective Support:** Hannah Arendt offers a compelling view that *real power is a function of collective consent*. She famously said, *“Power is never the property of an individual; it belongs to a group.”* In her conception, power is *“acting in concert,”* the capacity of a group to come together and achieve common goals. This power is **grounded in legitimacy** and agreement – *“Power corresponds to the human ability not just to act but to act in concert... It springs up whenever people get together and act in agreement.”* For Arendt, consent isn't just a static acquiescence; it's the active ingredient that *creates* power. She sharply contrasts power with violence: *“Where one rules absolutely, the other is absent. Violence can destroy power; it is utterly incapable of creating it.”* This means that if a ruler must rely constantly on violence, it's a sign that true power (which in her view entails legitimacy and support) has evaporated. True power exists only as long as people *consent* to work together or follow the leader; it *“vanishes when they disperse or no longer believe.”* Thus, consent is both the source and limit of power. A striking implication of Arendt's view is that **individuals alone are powerless**; what we call an individual's power is actually the mandate given by others' consent. Even a dictator's commands are obeyed only because armies and bureaucrats choose (whether out of belief, fear, or inertia) to execute them – the moment that chain of consent breaks, the dictator is just one person. Arendt's emphasis on legitimacy aligns with Weber's: she notes that power *“needs legitimacy,”* and that legitimacy comes from shared beliefs and the community's endorsement. In practical terms, this means institutions spend a lot of effort on **legitimation rituals** – elections, oaths, ideological education – to ensure consent is maintained. When legitimacy erodes (say, due to corruption or broken promises), consent can be withdrawn, and with it the power collapses (often suddenly, as in peaceful revolutions where the regime loses credibility and thus its support).
- **Manufactured Consent (Lukes and Bourdieu):** Steven Lukes' third dimension of power and Bourdieu's notion of misrecognition offer a more cynical take on consent: often what appears as consent is **manufactured by power**. Lukes argues that when people's preferences are shaped by a power structure, their consent to that structure (e.g. workers who *agree* they shouldn't strike, or citizens who *agree* with an autocrat's propaganda) might not be true alignment with their autonomous interests, but an induced state. It's consent, but *under the influence*. Bourdieu similarly says that symbolic power *“requires ‘misrecognition’”* – people do not see the power relation for what it is, instead they see it as natural or deserved. For example, peasants may obey the lord not just from fear but because they genuinely revere the lord as father-protector (having internalized the feudal ideology). This is *real* consent in that it's voluntary, but it has been **carefully cultivated by the dominant** through socialization, religion, etc. Such consent

is incredibly stabilizing (more so even than consent based on explicit rational-legal legitimacy) because it resides in the realm of habit and emotion, shielded from critique. Bourdieu's point about *symbolic power* is exactly that: the most effective power is that which is *recognized* as legitimate without even being seen as power. A clear example is how academic credentials are viewed – a professor's authority in class is accepted not because students think "I consent to be dominated" but because they *recognize* the professor's symbolic capital (PhD, university position) as naturally commanding respect. In this way, **consent is embedded in social norms**. This also ties back to Gramsci's hegemony: the ruling class leads by consent because its worldview saturates society's culture, so subordinate groups accept leadership in exchange for some moral/intellectual direction. In summary, legitimacy and consent can be obtained transparently (through social contracts, democratic legitimation, mutual benefit) or less transparently (through cultural hegemony, ideological influence). In both cases, however, they are the **linchpin of lasting power**. Without some degree of consent, power must lean on coercion, which is expensive and unstable; with consent, power is buttressed by the populace itself. This is why wise power-holders invest heavily in narrative, ritual, and responsiveness to maintain legitimacy. It's also why protesters and revolutionaries aim to **de-legitimize** rulers – once the aura of legitimacy cracks and masses withdraw consent (even passive consent), the mighty can fall with startling speed.

Power as Control versus Effect

Conceptual Definition: This theme contrasts two fundamental ways of understanding power: as **direct control** and as **indirect effect**. *Power-as-control* means A actively and intentionally **controls** B – issuing commands, using force or incentives, and directly *intervening* in what B does. It's an agent-centered, transactional view: power is something exercised in a specific interaction (often against resistance). *Power-as-effect*, on the other hand, means looking at the **effects or outcomes** of power relations even when no one is explicitly issuing commands at a given moment. It emphasizes how power can shape the field of possible actions, the preferences and thoughts of actors, and the systemic outcomes, rather than just discrete acts of domination. In this view, power can be *impersonal*, diffuse, or structural – it's seen in *what ultimately happens* (whose interests are served, what patterns persist) rather than only in deliberate decisions by identifiable agents.

Theoretical Insights:

- **Direct Control (Agentic Power-Over):** The simplest conception is "power over" someone in a direct sense – one agent *controlling* another's behavior. Dahl's definition (A getting B to do something B otherwise wouldn't) encapsulates this interpersonal control view. Here, power is an *act*: one issues an order or uses coercion, and the other complies (perhaps unwillingly). Most everyday uses of the word "power" (a boss has power over employees, a military has power over a region) fit this notion. It aligns with Weber's definition of power as well: "*the probability that one actor within a social*

relationship will be in a position to carry out their will despite resistance"arxiv.org.

Control-based power is typically **observable** – it's the stuff of commands, laws, and physical coercion. It's also often tied to resources (you can control others if you have money to reward or an army to punish) and to authority roles (positions that grant rights to command). Importantly, control implies a causal chain: A's action → directly causes → B's action. Traditional analyses like those in international relations (realist view: power as military and economic capabilities to *compel* outcomes) or behaviorist politics (who *wins* in a decision) focus on this active control aspect. Control is also tied to **intentionality** – A *intends* to influence B and succeeds. This is the realm of explicit power plays, from Machiavellian maneuvers to management directives.

- **Power as Effect (Structural/Indirect Power):** Critics of the pure control view argue that focusing on observable acts misses the broader *effects* of power that happen even in the absence of clear commands. Steven Lukes' third dimension, again, is illustrative: he describes power that is effective in shaping outcomes **without apparent conflict or overt intervention**. For example, if an ideology causes workers to accept low wages without protest, the *effect* is that the employer's interest (keeping wages low) is served, even though the employer never had to explicitly force the issue. Michel Foucault's analysis is even more radical in decentering control: for Foucault, power is "*not something that is exercised only by people through conscious acts of domination*"; rather, power is embedded in discourse, in knowledge systems, and everyday practices. It **produces effects** like certain kinds of disciplined, normalized individuals (e.g. the way modern institutions *produce* the "delinquent" or the "obedient student"). No single person may be controlling these outcomes; they emerge from a network of relations and institutional routines. Thus, we might measure power by its **outcomes (effects)**: who consistently benefits? whose norms are followed? what behaviors result? – rather than only looking for explicit commands. Another way to put it: control is power's **active voice**, effect is power's **passive voice** (what is done vs. what happens). Social structure and cultural hegemony often exercise power as effect. For instance, language itself can impose categories on our thinking (Whorfian idea) – an effect of power (the power of whoever's perspective shaped the language) far removed from direct control. In feminist theory, this appears as the distinction between overt patriarchal authority (control) and the subtle reproduction of gender roles through socialization (effect). *Power-as-effect* highlights how **systemic bias** and **institutional rules** channel outcomes without needing constant micro-level interventions.
- **Power-to vs. Power-over:** This distinction also touches on the idea of "*power to*" (capacity to achieve outcomes) versus "*power over*" (domination of others). Power-to (an agent's ability to effect change) can exist without having power-over anyone. For example, technological or creative power – the power to invent something new – is not about controlling others, but about bringing about effects in the world. Hannah Arendt's conception of power as the capacity for collective action (the group's power to act in concert) is more of a *power-to* idea. It's about generating effects (like building something or sustaining a public sphere) rather than control per se. In contrast, power-over is the

classic control idea (one agent over another). Many theorists (especially in democratic and feminist thought) argue that focusing solely on power-over misses positive, generative aspects of power-to. For instance, community empowerment is about people gaining *power to* improve their lives (an effect – improved life – rather than a domination relationship). This broadens “effect” to not only mean effect on the subjugated, but effect in terms of *outcomes achieved*. A government’s power might be judged by its effects like stability, economic growth, social welfare – not just whether it imposes its will on citizens.

- **Interplay:** In reality, power-as-control and power-as-effect often intertwine. A coercive command (control) might aim at producing a broader effect (e.g. censoring the press to produce an uninformed public). Alternatively, structural power (effect) can set the stage on which direct control contests play out (e.g. the structural power of a capitalist system affects how a strike by workers vs. employers will likely resolve). But analytically separating them helps highlight cases where power is **invisible** if one only looks for direct control. Lukes pointed out that if we use the narrow definition (control in decisions), we might conclude an outcome is consensual or apolitical, when in fact it was shaped by asymmetries in power that never needed to come to a head as a confrontation. For example, suppose in a company the workers never ask for a raise in a meeting (so no confrontation with the boss occurs). The control-view might say “no power dynamic here, since no one was forced.” The effect-view probes why the workers didn’t ask – perhaps because they feared retaliation or had internalized that they “don’t deserve more.” The *effect* of power (keeping wages low) happened without direct control being exercised at that moment. Foucault’s description of power as “a multiplicity of force relations” that are immanent in society, with power being “*the process which... transforms, strengthens, or reverses them*”arxiv.org, captures this diffuse, relational picture. He urges us to see power not as possessed and deployed only in big commands, but as *everywhere*, operating in the background of everyday social transactions. In active inference terms, one could say power-as-control is altering *states* directly (forcing immediate changes), whereas power-as-effect is altering the *model or context* such that certain states naturally ensue. The latter might mean influencing people’s **beliefs or environment** so they choose on their own a course of action that favors the power-holder’s interests – a scenario of “*voluntary*” *outcome engineered by invisible hands*. Both aspects are crucial for a full picture: effective power regimes often use control at some times and rely on systemic effects at others. Modern power might prefer the effect route because it’s less visibly coercive, leaving people feeling free even as they behave in controlled ways. As Lukes wryly noted, the *supreme exercise of power* is to get another to *internalize your wishes as their own*, achieving the effect you want without any overt push.

Emergent versus Enforced Power

Conceptual Definition: This theme differentiates power that is *emergent* – arising spontaneously from the interactions and interdependencies of many agents – versus power that

is *enforced* – imposed intentionally in a top-down manner by identifiable agents or structures. **Emergent power** is often decentralized, unplanned, and self-organizing: it “just happens” as a result of complex dynamics (for example, the way a social norm or market price emerges without a single authority deciding it). **Enforced power** is deliberate and structured: rules, commands, and designs that are laid down by those in power (like laws from a government or orders in a hierarchy). Another way to look at it is the distinction between **systemic power** (power that emanates from how a system is arranged, which can benefit certain actors without them having to actively assert it at every moment) and **agentic power** (power wielded consciously by agents who *enforce* their will). Emergent power often appears as the *impersonal “force”* of society or nature (e.g. “market forces” or cultural drift), whereas enforced power appears as the *personal authority* of rulers or institutions.

Theoretical Insights:

- **Foucault’s Micro-Power vs. Sovereign Power:** Michel Foucault’s work is instructive in this area. Traditional *sovereign power* (the king’s command, the law’s decree) is a clear example of **enforced power** – it’s top-down and centralized. Foucault contrasted this with the notion of “*capillary*” or *micro-power*: the diffused power present in everyday practices and knowledge systems that **emerges** throughout the social body. He famously stated, “*Power is everywhere; not because it is embodied in a sovereign, but because it comes from everywhere*”. In *Discipline and Punish*, for instance, he shows how disciplinary power in prisons, schools, and factories emerged not from a single tyrant’s will, but from a network of techniques and routines (the Panopticon principle) that produce obedience. This is *emergent* in the sense that no single guard must constantly enforce it; the design of the institution causes inmates to self-regulate. Foucault described power as a **network of relations** rather than a possession. This decentralized view posits that a great deal of social control is emergent: it’s a result of many small actions, norms, and technical arrangements that accumulate into a powerful order (the “microphysics” of power). People can thus be “*embedded within constraint-regimes*” that shape them, without a single person schematically orchestrating it arxiv.org. On the other hand, Foucault acknowledged that there are indeed states of domination – where power relations congeal and asymmetries are locked in. In his later work, he noted that **power relations become “fixed and hierarchical” in states of domination**, which is when emergent flows of power harden into something like oppression. This maps to *enforced power*: a situation where one group’s position is institutionalized so strongly that it continuously enforces constraints on others (no longer fluid or reciprocal). So even in Foucault’s ultra-diffuse view, there is a spectrum from emergent (fluid, multi-directional struggles) to enforced (stable, one-directional domination) power.
- **Games Between Liberties vs. States of Domination (Lukes on Foucault):** Steven Lukes, interpreting Foucault, highlights this difference: Foucault’s “*strategic games between liberties*” describe a condition where power exists but is dynamic and negotiated – individuals have some freedom and are constantly adjusting power relations through interaction. This is akin to emergent power: no one fully controls it; it’s the result of many agents exerting influence, resisting, strategizing in a free field. By

contrast, “*states of domination*” occur when those games freeze into a consistent pattern where one side can no longer effectively resist. That is enforced power – think of a dictatorship or any system where roles are rigidly set (masters and slaves, colonizer and colonized at the height of empire, etc.). In a state of domination, power is not co-created; it is **uni-directionally imposed** and maintained by institutional force. The emergent vs. enforced dichotomy here reflects a key tension in social theory: is power fundamentally something that *emerges* from everyone’s actions (even the dominated contribute by complying or resisting in small ways), or is it something *wielded* by a few over the many? The answer can be both, depending on context and scale. Many democratic societies pride themselves on emergent order (the “will of the people” emerging through discussion and pluralist competition), as opposed to authoritarian societies where order is enforced top-down. However, even democracies have structural biases (emergent elite interests, etc.), and even authoritarian regimes require some emergent compliance (they can’t put a cop on every corner without some tacit social cooperation).

- Structural Emergence (Bourdieu’s Fields):** Bourdieu’s view of society as composed of **fields** (like the artistic field, scientific field, etc.) offers insight into emergent power structures. In each field, power hierarchies emerge from the aggregation of many agents’ pursuits of capital and distinction. For example, in the scientific field, no single person enforces who is atop the hierarchy; rather, through competitions for grants, citations, peer esteem (scientific capital), a relatively stable hierarchy *emerges* (some scientists become highly influential). This hierarchy can then enforce certain implicit rules (e.g. paradigms, gatekeeping in journals) – but it’s maintained less by overt commands and more by the *collective misrecognition* that this hierarchy is natural or merit-based. Bourdieu’s idea of *doxa* (society’s taken-for-granted truths) is an emergent phenomenon – it’s not decreed by a dictator, it coalesces from repeated socialization processes – yet once established, it *enforces* limits on thought and discussion. In summary, much of social power (especially what he calls symbolic power) **emerges from culture and habits** rather than explicit design, but once emerged, it functions like an enforced rule (everyone follows it as if it were a law). For instance, the norm that one should have a college degree to get a good job isn’t the edict of any single authority; it emerged over time from educational and labor market practices, but now it *enforces* behavior (people feel compelled to get degrees, employers feel justified in requiring them).
- Active Inference: Self-Organization vs. External Control:** If we translate this into active inference terms, we might say emergent power corresponds to **self-organizing dynamics** in a multi-agent system. Each agent acts based on local predictions and goals, and out of these interactions, a global pattern of organization arises (like flocking birds form a shape in the sky without a leader – a metaphor for emergent order). Enforced power, conversely, is like an **external or top-down constraint** on the system – an imposed potential or boundary condition that agents must adapt to. Consider a scenario of multiple active inference agents: emergent power would be if, say, a convention or norm spontaneously forms (agents mutually adapt their priors until they all follow a similar policy – no one agent planned it, but it benefits perhaps some agents

more than others). Enforced power would be injecting a strong control signal into the agents' environment (e.g. one agent or an external operator fixes certain variables or heavily penalizes certain actions, so all agents must comply to minimize free energy). The former is more **organic and flexible** – it might even be invisible as power because it feels like “how things are”. The latter is more **mechanical and visible** – like a thermostat or governor forcing the system's state. Many power structures start enforced (someone explicitly sets rules) but over time become emergent as they are internalized and routinized. For instance, early in an organization, the founder *enforces* a way of doing things; years later, that culture persists even if the founder is gone, as an emergent property of how everyone operates. The benefit of emergent power for those at the top is that it's self-sustaining (people uphold it themselves), and for the system it can be more resilient. The drawback (from a moral standpoint) is that it can be harder to challenge – if no one explicitly *enforcing* it, who do you resist? Conversely, enforced power is easy to identify and rebel against (e.g. overthrow the tyrant), but it often has the advantage of clarity and speed – a law can change behavior overnight, whereas emergent change can be slow. In sum, emergent power often underlies structural and ideological dominance (and can feel like “*fate*” or “*the way the world works*”), while enforced power is seen in laws, commands, and coercive actions (the concrete hand of authority). Advanced analyses of society, like those by Foucault and Bourdieu, encourage looking past the visible enforcement to discern emergent power dynamics that might be even more significant in shaping people's lives.

Integrative Structure of Power Themes and Their Relationships

Figure: *Hierarchical organization of the power themes and their interrelations.* **Micro-level (Individual Cognition):** *Precision & Certainty, Attention & Capital, and Conflict & Salience* form the cognitive and motivational foundation of power. These themes operate at the level of individual perception and decision: by manipulating certainty (precision of beliefs) and controlling attention/resources, power influences whether conflicts arise or are defused. **Meso-level (Collective Coordination):** From those micro dynamics emerge group-wide patterns. *Coherence & Shared Generative Models, Enculturation & Norm Stability, and Legitimacy & Consent* are meso-level phenomena – they describe how individuals align into a coordinated whole. Shared beliefs and internalized norms lead to broad consent, creating a stable social order that reinforces the power structure. **Macro-level (Dynamic and Conceptual Aspects):** Overarching these are themes capturing the temporal and structural nature of power: *Temporality, Emergent vs. Enforced, and Control vs. Effect*. These represent the high-level dynamics and conceptual lenses – how power persists or shifts over time, whether it arises diffusely or via imposition, and how we conceptualize power (as direct control or broader effect).

At a causal level, **micro-level mechanisms drive meso-level outcomes, which in turn condition macro-level patterns.** For example, when those in power engineer high precision

and focus around a particular ideology (micro-level), individuals largely agree on a worldview. This yields **coherence** in the group's generative model and widespread **enculturation** into that ideology (meso-level), which produces **consent and legitimacy** – people genuinely accept the power structure. That legitimacy then feeds back into the micro-level: with a legitimate authority, individuals assign greater precision to the authority's signals and willingly allocate attention to its directives, rarely feeling conflicted. Over time (macro-level temporality), this self-reinforcing cycle can make power extremely durable (a **path-dependent stable regime**).

Mutual constraints and feedbacks: The themes constrain each other in important ways.

Precision & certainty (micro) is a lever that power uses to achieve **coherence** (meso) – by making a narrative seem certain, a ruler synchronizes the population's beliefs. In turn, **shared generative models** (meso) strengthen individual certainty – when everyone around you holds X to be true, you too become more confident in X (social proof increasing precision). **Attention & capital allocation** (micro) is both a cause and effect of **enculturation** (meso): power directs attention (say, via education, media) to inculcate norms, and once norms are in place, they further guide individuals' attention (people naturally focus on normatively approved topics and invest their resources accordingly). **Conflict & salience** is heavily moderated by **legitimacy & consent**: when legitimacy is high, potential conflicts lose salience (grievances are seen as minor or justified by the system, as per Lukes' third dimension). But if legitimacy erodes, previously latent conflicts can flare up as salient issues (e.g. a policy once accepted as "just how it is" suddenly is questioned by the public, leading to open conflict).

Causal orderings: One can trace a typical sequence: power often begins with *enforced control* at a micro level (e.g. an authority uses direct means to assert itself). If successful, this evolves into an *emergent effect* at the macro level – the authority's will becomes embedded in norms and institutions, so active enforcement can relax. In this process, **temporality is key**: initial enforcement over time yields an emergent order (an authoritarian may impose laws now, but decades later, those laws spawn a culture that upholds the leader's ideology even without constant force). A historical example is how a revolution (enforced power change) might set new norms that later become simply "how things are done" (emergent power).

Inter-theme relationships:

- *Precision & Attention* \rightleftharpoons *Coherence*: By **allocating precision and attention** to certain beliefs, power helps create a **shared model** (everyone is paying attention to the same signals with high confidence). Conversely, in a highly coherent community, individuals tend to direct attention in similar ways (guided by common values), reinforcing those precise beliefs. This is a tight feedback loop that can lead to echo chambers (everyone focusing on and confidently believing the same narrative).
- *Precision & Conflict*: If power raises precision (certainty) on a particular preferred narrative, **alternative perspectives lose credibility**, reducing open conflict (since fewer dare or care to contest). However, if two different precise beliefs collide (say, in a polarized society with two factions each very certain), conflict intensity can increase. Thus, power often tries to ensure **asymmetric precision** – one narrative is certain,

alternatives are discredited – to prevent symmetric conflict.

- *Attention & Salience*: Power's control of attention directly modulates **what is salient**. By spotlighting some issues and obscuring others, it decides which conflicts come to the fore. For instance, a government might flood media with nationalistic content (attention capture) to raise the salience of an external threat and lower the salience of internal dissent. Attention acts as a gatekeeper for conflict: only the issues that enter public attention with emotional weight (salience) become contested.
- *Coherence & Enculturation*: These are deeply intertwined – **enculturation** (the teaching and internalizing of norms) is the *process* that produces **coherence** (shared values and expectations). As people enculturate into a society, they converge on a common generative model, enhancing coherence. In turn, a highly coherent society makes enculturation easier and more self-sustaining (everyone reinforces the same norms). Think of coherence as the state of alignment and enculturation as the mechanism renewing that alignment in each generation.
- *Enculturation & Legitimacy*: Enculturation often carries the **justifications for authority** – through socialization, people not only learn *how* to behave but *why* the system is rightful. A stable norm in most societies is the norm of obeying legitimate authorities (parents, teachers, elders, leaders). Thus from childhood, people are often enculturated to consent. This grants **legitimacy** to power-holders as part of the culture. Meanwhile, legitimate authority uses institutions (schools, ceremonies, media) to further enculturate people. If enculturation fails (say a new generation is not convinced of the system's rightness), legitimacy erodes. So power must continuously enculturate its own legitimization story.
- *Legitimacy & Conflict*: High legitimacy means people *consent* even if they have grievances – they use proper channels, or they simply trust that “the system is fair enough.” This keeps conflict low. Low legitimacy means even small issues can trigger outrage, as people no longer give benefit of the doubt – conflict propensity skyrockets. The Arab Spring is a real-world case: long-enforced regimes lost legitimacy in the eyes of many, and suddenly long-suppressed conflicts (inequality, corruption grievances) became salient and led to uprisings. So legitimacy is a **pressure valve** on conflict.
- *Emergent vs. Enforced & Control vs. Effect*: These conceptual pairs cut across levels. Typically, **enforced power** correlates with **control** (you enforce via direct control), and **emergent power** correlates with **effect** (emergent structures yield effects without explicit control). In a functioning society, we often see a transition: enforced-control (e.g. founding laws, initial coercion) creates structures that then exert emergent-effect (e.g. social norms, institutional routines). However, if emergent effects start to deviate from the desired order, those in power may revert to enforced control to realign things (e.g. cracking down on an emergent protest movement). There's thus a dynamic balance: power-holders prefer power to function as a stable **background effect** (the “machinery”

runs on its own), but they will use **foreground control** when the machinery falters. Conversely, from the perspective of the people: when power is mostly emergent and effect-based (like invisible structural power), it can be hard to pinpoint and resist; it feels like fighting the air. If that emergent power is challenged and power-holders resort to obvious enforcement, the people suddenly see a clear target (e.g. visible oppression), which can galvanize resistance. So regimes often toggle between subtle effect power and open control power, managing perception and resistance.

Overall, the hierarchy and relationships imply a kind of **causal flow: individual-level manipulations (precision, attention) → shape collective states (shared models, norms) →** which secure **system-level stability (legitimacy, long-term power dynamics)**. The macro-level themes (temporality, emergent/enforced, control/effect) contextualize this flow: *Temporality* reminds us the flow is iterative and historical, *Emergent vs. Enforced* tells us the flow can be bottom-up or top-down, and *Control vs. Effect* frames whether we notice power in the specific push or in the overall outcome. Importantly, **the themes mutually constrain each other**: e.g. a purely enforced power with no emergent legitimacy is short-lived; a perfectly coherent, enculturated society might stagnate unless new conflicts (differences) inject change.

In practical terms, a power structure can be analyzed by checking all these aspects: Are individuals' perceptions being managed (precision/attention)? Are conflicts being suppressed or channeled (salience)? Does the group share a common narrative (coherence)? How are people trained to behave (enculturation)? Do they largely consent (legitimacy)? Is the power mainly held through brute force or through institutionalized effects? How has it changed or endured over time? Considering these together provides a **holistic view** of power at work. A change in one theme reverberates through others – for instance, the advent of the internet (new attention landscape) has challenged traditional enculturation and coherence, leading to crises of legitimacy in many authorities, and forcing a shift from emergent ideological power to more visibly enforced measures in some cases (like state censorship). Thus, the themes can be seen as interlocking dimensions; a robust power system manages all of them in harmony, whereas a failing one often shows cracks in multiple areas (e.g. conflict rising, narratives diverging, legitimacy evaporating).

Active Inference Formalization of Power Themes

We can translate each of the above themes into the formal concepts of **active inference (AIF)** – a framework in cognitive science that models agents as Bayesian systems trying to minimize their “free energy” (prediction errors) by updating beliefs and selecting actions. In active inference terms, power dynamics emerge from how agents influence each other's generative models (beliefs/priors) and policies (action strategies). Below is a mapping of each theme to active inference language, highlighting key concepts like precision weighting, shared priors, policy selection, free energy minimization, deontic value, and Markov blankets:

Power Theme

Active Inference Formalization

Precision & Certainty

In active inference, **precision** is the weight or confidence assigned to a prediction or outcome (mathematically, the inverse variance of a belief distribution). Power can be viewed as the ability to **manipulate precision-weighting** in agents' generative models. A powerful agent or narrative increases the precision of certain beliefs or preferences in others, making those beliefs **highly resistant to change** and dominant in guiding action. For example, a political ideology that becomes strongly trusted (high prior precision) will heavily bias policy selection – people will act in line with that ideology with little provocation. By contrast, undermining precision (sowing doubt) can weaken an opponent's influence. Formally, if we denote an agent's policy π that maximizes expected utility, a power-holder can tilt the odds toward their desired π by inflating the precision of outcomes that favor π . This **precision-weighted policy selection** means that the more certain and salient an outcome appears, the more an agent's free-energy minimization will prefer policies yielding that outcome. Thus, to exert power, one injects **certainty (low entropy) into others' generative models** about a desired course of action, so that alternative actions carry predicted surprise or error. Overall, power asserts itself as a **Bayesian authority**: it dictates which prediction errors are ignored (down-weighted) and which beliefs are held with conviction (up-weighted), thereby steering the agent's behavior confidently in the intended direction.

Attention & Capital

In active inference, **attention** is the process of tuning precision to certain sensory channels or hypotheses – essentially allocating cognitive resources. We can think of attention as **precision allocation over observations**, deciding which stimuli are relevant. Power influences this by acting as an **external precision modulator** on agents' attention. For instance, propaganda or salient cues can hijack an agent's attention, funneling their observation precision onto specific information (e.g. slogans, symbols) and away from other information. This is akin to controlling the "spotlight" of the agent's generative model. Furthermore, **capital** (whether economic or cognitive) can be formalized as resources that an agent invests in reducing uncertainty. A well-resourced agent can gather more data or maintain more complex models (i.e. higher model complexity budget), thus generally achieving lower free energy. Power as capital allocation means powerful agents can **broaden their generative model** (explore more states, plan further ahead) while also **commanding others' attention** to certain states. From an AIF perspective, one can model capital as availability of **precision budget**: agents with more "capital" can afford to set high precision on a wider range of beliefs (confidence in their worldview) and on more policies (trying ambitious plans with confidence). Those with less capital must concentrate precision sparingly (narrow focus, routine policies). Thus, a powerful entity might impose an **attention schema** on a group – effectively coupling the group's attentional precision to certain stimuli that it controls. This leads to *attentional herding*: all agents heavily weight the same evidence (often provided or curated by the power-holder), leading to a shared focus. In doing so, the powerful agent minimizes collective free energy **in directions favorable to itself** (since it decides what everyone pays attention to, unexpected states that threaten its interest can be hidden off-screen, so to speak). In summary, controlling attention in AIF is controlling **which prediction errors are even noticed** – a powerful strategy to prevent challenges. And allocating capital translates to shaping the **cognitive affordances** of agents: for example, funding research in certain areas but not others shapes what knowledge (models) society develops, thereby indirectly steering future inferences and policies.

Conflict & Motivational Salience

In AIF, a **conflict** between agents or between competing internal policies arises when different predictions or preferences produce incompatible desired states. **Motivational salience** corresponds to how strongly a particular outcome or cue drives behavior – technically, it relates to **expected free energy** (which includes intrinsic preferences or rewards). A highly salient stimulus has high expected precision for being relevant to fulfilling a preference. Power intervenes here by **modulating the salience landscape**. An authority can **amplify or diminish the expected reward** associated with certain states, thus reordering priorities. For instance, through rhetoric, a government might heighten the perceived danger (negative reward) of dissent (making compliance more salient for safety), or conversely, rebels might amplify the envisioned positive reward of freedom (making resistance salient). Under AIF, agents select policies that minimize expected free energy, which includes a trade-off between achieving preferred outcomes (exploiting rewards) and gaining information (exploration). Powerful agents often set up situations where the *exploitative reward* for obedience is high (e.g. material incentives, approval) and the expected cost (negative reward) for rebellion is high (e.g. punishment), thereby **de-salientizing conflict**. In effect, they **raise the precision of deterrents**: the potential conflict carries a very certain bad outcome, so it's not worth engaging. Meanwhile, they **lower the precision or incentive on conflictual goals** (by propaganda that says "this won't achieve anything" or by divide-and-rule tactics that reduce the expected coordination payoff of rebel policies). If we formalize motivational salience as the **precision of a prior preference** for a certain goal, power can reduce the precision of preferences that lead to conflict (making those goals fuzzy or less urgent) and increase precision on compliant goals. Conflict in multi-agent active inference can also be seen as **policy divergence**: each agent has its own generative model yielding different optimal policies. Power can enforce conflict resolution by **hierarchical models**: e.g. introducing a higher-level objective that both agents align to (reducing divergence). This is like adding a supra-agent or shared prior that coordinates them. When conflict does occur, it may be seen as each side trying to impose its **preferred precision weighting** on outcomes. The resolution often comes when one side's precisions overwhelm the other's (making the other side concede as their model updates). In short, to formalize: power shapes the **utility term** in agents' free energy. By redefining what is valuable or dangerous, it **alters the motivational salience** of potential conflicts. A fully quiescent society would be one where any policy that would oppose the power structure has such low expected reward (or high expected risk) that no agent's free-energy minimization deems it optimal to pursue.

Coherence & Shared Generative Models

When agents have **shared generative models**, they essentially operate with **synchronized priors and beliefs**. In active inference, this can be described as agents sharing portions of their Bayesian network (a common model of the world or of each other). **Coherence** in a group means low relative entropy between individuals' beliefs – everyone expects similar outcomes from similar states. Such coherence can be achieved if agents engage in continual **belief updating with each other's states as evidence** (Bayesian belief sharing). Power can be thought of as an orchestrator or result of this process: a power structure often creates institutions (schools, media, rituals) that function as **coupling mechanisms** for generative models, ensuring people observe the same signals and update toward the same priors. One could formalize a community's culture as a **hyperprior** that all agents incorporate. For example, a religion provides a shared generative model (with assumptions about the world, moral priors, etc.), yielding high coherence among believers. In AIF terms, that religion acts like a **shared higher-level node** in each agent's model, constraining interpretations in a uniform way. The result is coordinated perception and action – agents make similar predictions and thus act in concert, yielding what we perceive as social order. This can drastically **reduce surprise (free energy)** at the collective level: interactions are smooth because each agent can predict others reliably (they share the same model of what behaviors to expect). From the perspective of power, coherent shared models are desirable because they **minimize intra-group uncertainty** and conflict. It's easier to govern a population that literally sees the world in the same way. Formally, if each agent i has a generative model M_i , high coherence means $M_1 \approx M_2 \approx \dots \approx M_n$. Mechanisms like **communication, imitation, education** serve as Bayesian model alignment protocols (each interaction slightly adjusts one's model toward others). A fully coherent group could even be modeled as a *single joint agent* with a big generative model (some theories of collective minds go in this direction arxiv.org). Power emerges in such a scenario as the **weighting of certain shared priors**: if one subgroup (e.g. elite) can introduce or alter a prior in the common model (like "leaders are trustworthy" or "X group is enemy"), the whole group will move in lockstep to incorporate that. Hence, controlling the **common generative model** (e.g. narrative control) is a profound form of power. Conversely, challenges to power often involve **splitting the shared model** – introducing an alternate model (counter-narrative) that some agents adopt, breaking coherence and potentially forming a new coherent faction. Overall, active inference highlights that coherence equates to **all agents minimizing a joint free energy** (the group's predictions about each other and the world match outcomes). A stable power structure is one that has achieved a low

free-energy basin for the collective – a shared set of beliefs so coherent that any straying agent is quickly corrected (as they would experience high surprisal and social pressure to return to the shared model).

**Enculturation
& Norm
Stability**

Enculturation in AIF terms is the process of installing **long-term priors (biases)** in agents through repeated social training. These priors include **deontic values** – expectations about what one should do (normative priors on policies). For example, a child enculturated to “respect elders” will have a prior that when an elder gives an order, obeying is strongly preferred (high prior probability for compliance policy). Enculturation thus sets the **starting priors and hyperparameters** of an agent’s generative model to align with the culture. Because these are deeply learned (often early, often through attachment figures and repetition), they come with high precision: the agent trusts these priors confidently. **Norm stability** results when these priors are widely shared and consistently used across a population and across time. In active inference, a norm can be seen as a **policy that is strongly preferred (or expected) by all agents in certain contexts**, often backed by an internalized cost if violated (prediction error or aversive feedback). Once enculturation has occurred, each agent’s model contains these normative priors, meaning each agent will predict norm adherence from others and themselves. The norms become **self-fulfilling expectations** – everyone behaves according to them because that’s what everyone *expects* (to do otherwise would generate surprise for self and others). Technically, a norm is a *shared prior policy* with high precision, and norm stability means that even as new agents enter (new children born), the enculturation process reliably implants the same prior in them, maintaining the norm across generations. The concept of a **Markov blanket** is useful here: each individual has a Markov blanket separating their internal states from external states (including other agents). Enculturation effectively extends a *cultural Markov blanket* around the group – a set of common external states (symbols, rituals, sanctioning mechanisms) that interface with each individual’s internal model to keep it aligned. For instance, cultural rituals provide sensory inputs that **update each agent’s priors** periodically, ensuring drift is corrected (think of weekly religious services reminding everyone of core beliefs, which in AIF terms is like a collective Bayesian model update that re-aligns any wandering posteriors back to baseline). **Policy compression** occurs as a result: agents don’t need to evaluate a vast array of possible actions – their cultural priors narrow the field to norm-compliant ones, greatly simplifying decision-making (reducing computational free energy). This compression is efficient for the agent (less deliberation) and beneficial for power stability (fewer deviant actions). Deontic value is reflected in the agent’s reward structure: actions that fulfill norms are assigned positive intrinsic reward or relieve anxiety, whereas norm violations carry internal punishment (guilt, fear of sanction). So an enculturated agent, even in isolation, will tend to police themselves (violating a norm would create an **internal prediction error** – “I did something I shouldn’t, this feels wrong”). In AIF, that

prediction error is resolved by avoiding the violation or correcting it, thus returning to normative behavior. In a multi-agent system, if someone does violate a norm, not only do they feel error, but observers do too (since their model predicted the norm would be followed) – this **social prediction error** triggers external correction (e.g. scolding, exclusion) as others act to minimize the surprise in their world model caused by the deviant behavior. This feedback loop keeps norms stable: any perturbation is resisted by both the actor's own model and by others' reactions. Power structures leverage this by embedding their interests into norms (for example, "loyalty to the king is the highest virtue" becomes a norm; breaking it shocks everyone, so it's rare). Enculturation can thus be seen as installing a **common loss function** in each agent that penalizes deviation from certain policies (effectively shaping the free-energy landscape so that norm compliance is a low-energy valley for all agents). This ensures that the social order (which benefits the powerful) reproduces itself with minimal active intervention.

Temporality of Power

Active inference models typically include a concept of **time horizon** in planning: agents consider future states and outcomes in their expected free energy calculations. The *temporality of power* can be formalized by differences in how agents model deep time and how stable attractors in the system are. A powerful agent often has the ability to plan over **long temporal horizons** – effectively they have a generative model that projects further into the future (e.g. a state can have policies with intergenerational outcomes, whereas an individual peasant might have to focus on next month's food). This can be encoded as having a lower temporal discount factor: power allows agents to **minimize free energy over longer timescales**. Additionally, power can shape the **environment's dynamics** to be more predictable or favorable over time. For example, creating institutions is like altering the state transition probabilities in the world in a persistent way (a law changes how states evolve for everyone, introducing an enduring dynamic). We can formalize a stable power structure as the system settling into a **particular attractor (equilibrium) in the phase space of beliefs and social states**. In a Bayesian mechanics sense arxiv.org, power can be seen as establishing a **strong attracting basin** in the joint belief space: once the population's beliefs enter that basin (e.g. adopting the ruling ideology), they remain there (normative stability) until a significant force perturbs them out. Temporality also involves **path dependence**: the sequence of past states matters. Under AIF, agents update posteriors based on the succession of observations. If powerholders control the sequence of observations (e.g. narratives of history, what people experience over time), they condition the entire trajectory of belief updating. Consider indoctrination: an agent's beliefs at time t depend on their observations from 0 to t . By curating those observations (education curriculum, media control), power influences the time-integral of free energy – keeping prediction errors low in a manner that biases final beliefs. In essence, *who controls the past (and the narrative of past) controls the priors of the present, and who controls present priors influences future states*. Formally, if we treat culture as a hyperparameter that evolves slowly, power attempts to lock that hyperparameter in place (or evolve it to its advantage) and thereby constrain the faster dynamics (day-to-day interactions). Another temporal aspect: **resilience vs. phase shifts**. A long-standing power structure can be seen as a system at or near equilibrium (free energy minima), which is resistant to small perturbations. However, if gradual changes (tensions, unmodeled factors) accumulate, the system might reach a critical point and shift to a new equilibrium (e.g. a revolution is a phase transition in the social model). Active inference would model this as agents eventually encountering unresolvable prediction errors under the old model (due to temporal changes in external states), forcing a collective model update

(sometimes abrupt) to a new regime. Those with power try to forestall such crises by **adaptive inference** – updating some aspects of the shared model to absorb shocks (e.g. minor reforms to address public discontent, resetting the equilibrium a bit). Summarily, in active inference terms temporality highlights: (a) **planning depth** – powerful agents optimize expected free energy over longer sequences, effectively shaping future outcomes (policies with foresight); (b) **stability of beliefs** – power creates slowly-changing (low-frequency) hyper-priors that make the system's belief updates sluggish and thus stable; and (c) **historical updates** – the trajectory of observations (history) can lock agents into certain models (a concept akin to “information enslavement” – early conditioning restricts later belief flexibility). Power's temporal dimension is to engineer these factors such that the future state of the world continues to confirm the current generative model held by those in power, thereby avoiding surprise and maintaining control as time unfolds.

Legitimacy & Consent

Legitimacy in active inference can be conceived as a **shared belief (prior)** among the population that a certain authority or rule structure is proper and should be obeyed. It manifests as a collective prior that compliance with the authority is the expected behavior – essentially a **hyperprior on policies** that says “policies aligning with leader’s directives have high prior probability of being correct/good.” When legitimacy is high, agents across the society have aligned precision expectations: each agent expects others to comply and expects themselves to have an obligation to comply. This mutual alignment can be seen as a **convergence of precision weighting across agents**: everyone strongly weights the signals and commands from the legitimate authority as reliable (high precision) and strongly weights the norm “obey authority” in their policy selection. In effect, legitimacy creates a **distributed coordination**: it’s rational (in a Bayesian sense) for each agent to comply because their generative model predicts that’s what a good (rewarding, low-surprise) agent does, and that deviating would cause sanction (surprise) not only from the authority but from peers who also believe in that authority. We can formalize consent as each agent having a **prior preference** for states where they follow the authority’s policy and things turn out well. That prior is satisfied because the authority is indeed making decisions that (under legitimacy) are believed to be beneficial or at least accepted. Free energy is minimized for individuals when they act according to this prior (obey), since doing otherwise would conflict with their ingrained beliefs and expectations (yielding cognitive dissonance, a form of internal prediction error). Legitimacy is maintained as long as the **observations** largely match the expected outcomes of the authority’s rule (e.g. the authority keeps order, provides some justice or welfare as promised). If outcomes diverge too much (authority issues too many surprises like unjust actions or failures), agents experience **prediction errors** relative to their legitimacy prior, which can lead to an updating: either they revise expectations (lose faith, lowering the prior probability that the authority is just) or they seek to rationalize to keep legitimacy (often until a breaking point). In a stable regime, power-holders will send signals (through propaganda, symbolic acts, minor policy successes) to continually **reinforce the prior** of their legitimacy – basically providing Bayesian evidence that “see, obeying me yields good results as expected.” We could say a legitimate authority enjoys a **regime of trust**: trust is the subjective value of precision on the authority’s signals. High trust = high precision = compliance with minimal force. In multi-agent simulations, legitimacy could be modeled as a common hyperparameter that, when high, couples agents’ policy choices strongly to one leader’s announced policy. This drastically reduces policy entropy in the group – a consent-filled society is more predictable and behaves like a unified agent following the leader’s model. The idea of **convergence of precision expectations** means everyone not

only trusts the authority, but knows everyone else does too (common knowledge). This is critical: if I alone trusted the leader but I thought no one else did, I might still not follow orders (because I expect social chaos). Legitimacy is a **collective phenomenon** – essentially a synchronized belief state. In game-theoretic terms, it's like a coordination equilibrium: "we all believe X is the ruler, so X is the ruler." Active inference formalizes this by saying the **prior probability of widespread obedience** is baked into each agent's model; any deviation (like observing mass protest) is a surprise that can rapidly flip expectations if not corrected. Finally, consent can also be treated as a **lowering of free energy barriers** for the authority: when consent is present, the authority doesn't have to do work (apply heavy control inputs) to move the society to a desired state. The society moves of its own accord in response to mild signals. This is akin to a system where friction is low – a small force by the leader yields large coordinated movement because all agents are already primed to move that way. In summary, legitimacy = **common high-precision prior on the rightfulness of commands**, and consent = the resulting *equilibrium behavior* where each agent's optimal policy includes following those commands. As long as the authority's actions don't create unmanageable prediction errors, this equilibrium holds and is self-reinforcing. If prediction errors mount (legitimacy crisis), agents will update and the prior can collapse, at which point compliance must be either obtained through brute force (high free energy cost) or the system shifts to a new equilibrium (new leadership or norms).

**Power:
Control vs.
Effect**

Active inference allows us to distinguish between **direct control** of external states vs. **modulating the generative model** that produces states. *Power as control* corresponds to an agent taking **action policies** that directly force another agent's sensory states or environmental states toward a desired outcome (often creating immediate prediction errors for the other agent that are then resolved only by compliance). This is analogous to applying an exogenous "control signal" in the other's state equations – e.g. physically restraining someone or issuing a clear threat that changes their environment. The controlled agent then updates its model under duress (or not, and just is physically coerced). This is a **first-order intervention**: A changes the world, which in turn changes B's observations, driving B's behavior. In contrast, *power as effect* is more like a **second-order intervention**: A doesn't directly push B, but rather **alters B's generative model or context** so that B *autonomously* chooses the desired action. This could be done by providing information, shaping incentives, or slowly changing B's beliefs over time. In active inference, one can formalize this as A acting on the **hyperparameters or observations of B's model** rather than on B's body directly. For instance, instead of forcing B to hand over money (direct control robbery), one could effect power by convincing B that giving money is the right thing to do (perhaps via a contractual obligation or a sob story) – B then hands over money willingly because their *own* model deems it optimal. In the first scenario, B's compliance is a *reaction to constraint* (their free energy might actually spike because it's against their prior, but physical force leaves no choice). In the second, B's compliance *minimizes their own free energy* because A has successfully altered what B expects or prefers (so not giving money would cause B more discomfort, e.g. guilt or fear of social sanction). We can relate this to the concept of **active vs. passive influence**: Control = A actively intervenes on states, Effect = A passively (or covertly) sets up conditions for B's self-intervention. A fully *effect-based* power means the environment is structured such that B's optimal policy (from B's perspective) coincides with A's interests – no overt command is needed. For example, in a market system (effect power), a company doesn't force you to buy its product; it advertises and sets a price so that *you choose* to buy – your generative model says "I want this, and it's worth the cost". The company influenced your model (through marketing and value propositions) rather than your physical state. Another AIF way to see it: *Power-as-control* is A inserting itself as a strong **external perturbation** in B's free energy minimization (e.g. a very high cost if B disobeys, like a gun to the head, which overwhelms B's prior preferences). *Power-as-effect* is A **redesigning B's free-energy landscape** so that B's natural gradient descent (decision process) leads to the desired minimum (outcome) without needing a large external gradient (force). Socially, this often means structural power: rules of the game, ideologies, incentives do

the work – individuals just follow their incentive gradients which have been arranged by the powerful. One can formalize structural power as **probabilistic constraints** on state transitions that benefit some and harm others without direct commands (e.g. “given the tax policy and my income, the best thing for me is to work overtime” – no one forced extra work, but the system’s setup effected that behavior in aggregate). In summary, in active inference terms: **Control-power** = altering others’ *actions* via direct coupling (high-energy, explicit control signals), **Effect-power** = altering others’ *beliefs or environment* (contextual, implicit) so that they naturally produce the effect. Both achieve similar outcomes, but the latter is often more efficient and hidden (and aligns with Lukes’ and Foucault’s emphasis on how power’s ideal state is when it doesn’t have to be exercised as force because it has been internalized or systematized). From a free-energy perspective, power-as-effect is elegant: it **outsources the work of compliance to the subordinate’s own minimization process**. Power-as-control has to constantly inject energy to keep the system in line (like a thermostat that’s always heating because the room loses heat – analogous to a tyrant always coercing because people keep deviating). Power-as-effect is like insulating the room – now the thermostat can be low because the room naturally stays near the desired temperature. In human terms, that insulation is ideology, habit, and self-regulation – the marks of effective power.

In the above formalizations, we see that active inference provides a unifying language: **beliefs (priors), precision, policies, and free-energy minimization** under uncertainty. Power can be seen as the art of **shaping these variables** across a population: setting priors (through enculturation and legitimacy), tuning precisions (controlling attention and certainty), structuring payoffs (salience of conflict vs. compliance), and ultimately designing the **shared environment (social niche)** such that each individual, by following their own predictive dynamics, **enacts the larger power structure’s preferred outcomes**. This formal lens helps to explain why power that is less visible (emergent, effect-based) can be more stable – it operates through the internal models of agents, not against them. Each person, in minimizing their surprise and pursuing their goals, inadvertently **fulfills the system’s goals** (when power relations are successfully internalized and stabilized). Conversely, it highlights the fragility of purely coercive power: if it doesn’t align with agents’ generative models, it must constantly fight against their free-energy minimization (people will adapt, resist, or escape to restore their own equilibrium).

By framing social power dynamics in this way, we can envision new quantitative models (as suggested by works like **Ramstead et al. (2023) on Bayesian mechanics of social systems**[arxiv.org](https://arxiv.org/abs/2305.18441) and related active inference simulations) where concepts like **attention control, narrative scripts, normative priors, and institutional constraints** are all parameters in a giant coupled system of agents. The stability of a society (or the domination by an elite) would then be analyzable in terms of that system’s **entropy and coupling structure**, and social

change as shifts in the shared generative model (a phase transition in collective beliefs). This marriage of social theory themes with active inference formalisms not only deepens our conceptual understanding (as we've done qualitatively here), but promises a pathway to **simulate and predict** complex phenomena like the spread of norms, the collapse of legitimacy, or the emergence of cooperative vs. coercive regimes under varying conditions.

INITIAL THEMATIC ANALYSIS

Power is a degree of precision - over goals and policies - certainty of path and outcome

It reduces the discrepancy between expected and sensory feedback

Power is motion of attentional processes - where capital is then allocated

conflict is partly a function of motivational salience, and competing preference

Power also acts as a coherence mechanism as propagated through a generative model - a shared generative model - this enables coordination, which also acts as degree of power, for an entity - this is internal group control - larger groups can effect high certainty. and thus enact one vision. the collective holds weight, much like an ising model.

Power is maintained over longer periods of time through values, which shape the attentional environment - we call this enculturation - or homogenization of beliefs - which ultimately minimizes how much energy has to be inputted into the system

Ultimately what this means is that information can go faster, thus the curvature of the space of attractors is steeper - and this is self reinforcing - it leads to feedback loops, and ultimately when stable - habits

Markov blankets act as a form of decentralized control

Power is manipulation and acquisition - violence and fear

Power means a given agent controls other agents

Intrinsic temporality of power - what does it mean for power to have temporality?

Temporality of power seems to be that power assures certain policies and those can manifest over time - Temporality also manifests as the ability to resolve conflicts in the moment - but also to keep them from happening at all - and then to get people to coopt the power at all

Certainty of intent is power- the degree to which intent is concentrated?

Desire for power is in all agents - to various degrees

The difference between power as a capacity vs as an effect

The degree to which power is spread among agents

The notion of legitimacy as the degree to which intent is shared

Effectively power needs to be given some degree of ascent by the other members of the group - for multiple reasons - so there is a degree of precision for power, like a path certainty

Difference between power enforcement (or reiterating the certainty of the path) and the power itself

Power is maintained by everything - as it maintains structures which reify the ecosystem and thus the practices and knowledge

Power is creative - it creates possibilities, as much as it destroys them. It reshapes the space.

there are signifiers of power that allows us to access positions of power - i.e become the ones who wield the attractors

The expectation of the enactment of power, or its release relative to its potentiation constitutes spatio-temporal constraints

this expectation is reified through legitimation - i.e others expect this enactment and act in accordance without it being enacted

Power may not apply in every field equivalently, suggesting that it's a question of path precision. The degree to which one single node affects several power nodes may be different, which implies there may be complex relationships of what constitutes precision.

Power to, power with and power over always can be formalized in terms of resistance, but the type of source of resistance is different

Power seems to be similar to agency in so far as it speaks to the ability to affect paths in ways they would not normally take.

Power also seems to define the constraints which hold certain markov blankets (groups) together.

The degree to which individuals wish for power and empowerment may depend on their sense that they can even expand their path, or that they have the energy to spend in order to shift the path

Formal model

(1) Precision & Certainty → Precision control + γ

- Sensory precision on A (what signals seem reliable), transition precision on B (predictability of consequences), policy precision γ (confidence in chosen policies). Boosting precision on selected beliefs/policies suppresses alternatives, formally increasing their posterior weight and narrowing policy entropy.

(2) Attention & Capital → Ambiguity term + precision budget

- Ambiguity reduction in $G(\pi)$ (preferring policies with unambiguous outcomes), resource-dependent precision budgets (how many hypotheses can be kept “in focus”). Power directs collective attention by raising precision on curated observations and lowering it elsewhere, steering the ambiguity component of EFE.

(3) Conflict & Motivational Salience → Preferences C + expected risk & costs

- C (prior preferences), expected risk term in $G(\pi)$, and penalties for deviance; also, epistemic value (information-seeking) can be down-weighted via higher γ . Inflate the (negative) expected utility of dissent or the (positive) utility of compliance to reorder salience—policies that resist become EFE-suboptimal.

(4) Coherence & Shared Generative Models → Shared (hyper)priors & belief alignment

- Alignment of C across agents, public signals that synchronise A/B posteriors, and shared hyperpriors (Bayesian-mechanics view). Reduce relative entropy between agents' beliefs so interactions are predictable; in the limit, a group behaves like a single higher-level agent. [Royal Society Publishing](#)

(5) Enculturation & Norm Stability → Deontic cues + habits E + high-precision priors

- High-precision C (oughts), E (habitual priors over policies), and a/b updates that stabilise A/B inferences consistent with the culture. Make norm-conforming policies cheap and fast via deontic value, action becomes cue-driven; violations create prediction errors in self and others, triggering correction. [Frontiers](#)

(6) Temporality of Power → Planning depth + transition shaping (B)

- Time horizon T / discounting, structural edits to B (institutions/laws) that change long-run transition probabilities. Powerful agents plan over longer horizons (optimize G deeper in time) and re-engineer the world's state dynamics, creating durable attractors of belief and behavior. [UCL Discovery](#)

(7) Legitimacy & Consent → Common-knowledge priors + high trust precision

- Shared high-precision priors that leader signals are reliable (raise precision assigned to those observations), C aligning with promised outcomes. With legitimacy, mild signals suffice: the softmax over $-\gamma G$ already favors compliance because others *expect* compliance (coordination equilibrium).

(8) Power as Control vs Effect → State forcing vs. model shaping

- Directly perturb others' states/observations (impose large external costs) → compliance via exogenous gradients. Alter **A/B/C/E** or precisions so others *autonomously* choose your preferred policies (minimal external work, compliance emerges from their own G minimization).

(9) Emergent vs Enforced Power → Self-organization vs. imposed priors

- **Emergent:** distributed updates yield stable shared priors/blankets (e.g., markets, academic fields) with no central controller.
- **Enforced:** top-down fixes of B , hard priors over C/E , and high γ concentrate control; over time, enforcement can sediment into emergent structure.

Structural and learning parameters

- A (likelihood) and a (Dirichlet concentration over A) : what observations are expected from which hidden causes; a is the learned *confidence* in that mapping. Manipulate sensory precision or the *a-prior* (e.g., curated data, propaganda, media filtering). High a locks in a worldview; low a yields openness to alternative evidence. [PMC](#)
- B (transitions) and b (Dirichlet over B): perceived consequences of actions (state dynamics). Institutions/laws reshape B (and their b), making some futures reachable and others improbable, classic agenda-setting in the dynamics. [UCL Discovery](#)

- C (preferences over outcomes) and c (Dirichlet over outcome counts): what counts as “good/bad” (risk term in EFE). Value-shaping (education, ideology) shifts C; high-precision C crystallises legitimacy and consent. activeinference.github.io
- D (initial state prior) and d (Dirichlet over start states): default situation one expects to be in. History and curricula set D/d (who we think we are and where we start), locking long-range trajectories. [Royal Society Publishing](https://royalsocietypublishing.org/)
- E (policy prior; habits) and e (Dirichlet over policy counts): habitual policies (what we tend to do by default). Enculturation creates strong E/e for norm-following; deontic cues trigger these habits quickly.

Control/decision parameters

- γ (policy precision / inverse temperature): confidence in policy selection; high γ compresses behavior to the *currently believed* best policy. ramp γ via urgency, fear, or consensus → dissent policies lose probability; damp γ to promote exploration and pluralism. activeinference.github.io
- **Modality-specific precisions** (likelihood precisions for different information streams): gates “what gets attention”. Amplify friendly modalities (owned media, approved metrics) and attenuate hostile or noisy modalities. [ScienceDirect](https://www.sciencedirect.com/)
- **Planning horizon T / temporal discounting**: depth of foresight in EFE. Long-horizon actors can optimize for distant payoffs (infrastructure, education); short-horizon actors get stuck in myopic equilibria. [UCL Discovery](https://discovery.ucl.ac.uk/)

3.3 Value and norm parameters

- Deontic value parameters (cue-policy mappings learned from the niche): fast, cue-triggered policy selection (no deep inference). Design/standardize deontic cues (insignia, seals, audit thresholds) so that norm-following is the lowest-energy choice for everyone. [Frontiers](https://www.frontiersin.org/)
- **Shared hyperpriors / coupling strengths** (Bayesian-mechanical view): how tightly agents’ models are coupled (coherence). Schooling, rituals, and harmonized media increase coupling, lowering inter-agent KL divergence and stabilizing consensus.

Level	Kind of Power	Essence	Primary Active Inference Parameters
Micro	Precision Power	Control over certainty/confidence in beliefs	Sensory precision (σ^{-2}), policy precision (γ), A-matrix Dirichlet a
	Attentional–Capital Power	Control over what receives cognitive or resource investment	Precision allocation over modalities, attention gain parameters, capital \approx precision budget
	Motivational–Salience Power	Control over which goals or conflicts feel worth acting on	Preference precision (C, c), expected free energy terms, risk vs. ambiguity balance
Meso	Coherence Power	Shaping shared generative models (alignment of priors)	Shared priors/hyperpriors, coupling weights between agents, entropy of belief alignment
	Enculturative Power	Installing long-term deontic priors and self-regulating norms	Deontic value, habit priors E/e , normative policy priors with high precision
	Legitimation Power	Establishing collective priors of rightfulness and trust	Common hyperprior of legitimacy, policy precision γ synchronized across agents
Macro	Temporal Power	Control over planning horizons and long-term attractors	Temporal discount factor, horizon length T , slow hyperpriors (belief inertia) (I.e., in hierarchical models)
	Control Power	Direct forcing of states and actions	External control input on B-matrix transitions; exogenous state perturbation
	Effect Power	Indirect shaping of models and context	Hyperparameter tuning of A/B/C/E, environmental conditioning, precision modulation
	Emergent vs. Enforced Power	Bottom-up self-organization vs. top-down constraint	Degree of coupling between agents; relative precision between local vs. global priors
