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ORIGINAL ARTICLE

The Multi-Capital Leadership Theory

An Integrative Framework for Human Leadership Diversity

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Abstract
Human leadership and followership take many forms, shaped by the social, economic, political, and cultural contexts of our groups and societies. Underlying this complexity, we argue, are key elements of human social psychology regarding social comparison and the resolution of coordination and collective action problems. The Multi-Capital Leadership (MCL) theory posits that leader emergence and effectiveness depend on perceptions of individuals' abilities to provide benefits or impose costs in solving challenges of group living, through the deployment of different forms of capital: *material*, *social*, *somatic* (e.g., physical formidability, height, immune functionality), and *neural* (e.g., knowledge, intelligence, personality, supernatural abilities). We integrate this framework with a review of leadership across human societies, including in non-state and non-industrial contexts, and with novel comparative analyses of ethnographic data. This synthesis highlights how context-specific demands for coordination and collective action, and the accuracy of social comparison, shape the structure and dynamics of leadership and followership across cultures.

Keywords Leadership · Followership · Context · Cultural diversity · Embodied capital · Human capital

Theoretical economy is self-defeating if it distorts or ignores the complexity of what is being explained.—Bruce Trigger, Archaeological Theory: The Big Picture, 2003.

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Introduction

The dynamics of human leadership and followership arise from a complex interplay of social, economic, and cultural forces. These forces shape who becomes a leader, in what contexts, and how they maintain influence and are perceived by others. Drawing on cross-cultural and interdisciplinary research—from small-scale rural communities and non-human primates to governments and firms—we introduce the Multi-Capital Leadership (MCL) theory as a framework for explaining why leadership emerges and how it varies across contexts. Grounded in evolutionary anthropology, the MCL theory integrates variation in individuals, their socioecological contexts, and the potential outcomes of individual behavior and decisions, offering a framework for explaining the multiple paths by which leadership emerges across societies.

Currently, no single theory adequately accounts for the contextual and cultural diversity of human leadership (Antonakis et al., 2017). More than a century ago, Mumford (1906, p. 217) astutely identified this central challenge in leadership research:

Each of the special social sciences has to do with leadership in its relation to a particular subject-matter, and with reference to the realization of certain purposes and ends; but none of these special social sciences have undertaken to describe and explain the function of leadership in general, and as one of the fundamental forms in the reciprocalities of all individuals and groups of individuals.

Today, leadership scholars still highlight similar challenges (Antonakis et al., 2024). In their edited volume *The Nature of Leadership*, Antonakis and Day (2018, p. 17) conclude the opening chapter noting:

Leadership researchers need to begin to conceptualize ways in which many of the diverse findings can be united, theories trimmed, and then synthesized and integrated both within and between disciplines.

Addressing this call requires a theory that explains why leadership exists, accounts for the diversity of its forms, and integrates insights across disciplines. We argue that such integration must consider the evolutionary roots of human sociality and the unique challenges posed by our complex group dynamics.

What is Leadership and Why Does it Exist?

The evolution of leadership, like that of cooperation, poses a fundamental theoretical challenge (Giardini et al., 2022; Henrich & Henrich, 2006). Natural selection should favor individuals who make adaptive decisions that advance their own interests (Hagen et al., 2012; Stevens et al., 2005). Yet in all human societies, at least in some contexts, most individuals defer to others who have disproportionate influence over group goals, coordination, monitoring, and norm enforcement—that is, leaders (von Rueden & Van Vugt, 2015). Leaders can sometimes act against followers' immediate interests and may exploit their position for personal gain (Garfield et al., 2020; Maner & Mead, 2010). This paradox begins to resolve when we consider the evolution of group living and our species' obligate sociality.

Group living is relatively rare among mammals (Lukas & Clutton-Brock, 2013; Wilson & Reeder, 2005) but is more common among primates and has played a

central role in the evolution of many primate social systems (Carpenter, 1963; Wasserman & Faust, 1994). However, its evolution faces significant hurdles, including within-group competition for resources, the problem of free-riders, elevated disease transmission, and complex coordination challenges (Alexander, 1974; Chapman & Valenta, 2015; Van Schaik, 1983; Wrangham, 1980). These coordination challenges include consensus costs, where group decisions impose unequal burdens on members, risking fission or dissolution (Conradt & Roper, 2005).

These challenges are even greater for humans, who maintain larger and more diverse groups than other apes (Bird et al., 2019; Wrangham, 1987). Larger groups also face steeper barriers to cooperation, as coordination problems and conflicting interests scale with group size (Johnson, 1982). Our uniquely human patterns of social organization and behavior likely stem from an evolutionary history that involved open, terrestrial habitats with greater exposure to predators, group hunting, long-term pair bonds, and a sexual division of labor (Hagen et al., 2025; Hooper et al., 2021).

Humans are also among a small subset of mammals (about twenty species) that exhibit multi-level social structures, where stable core units such as nuclear families are nested within larger levels including foraging bands, kin networks, and political groups (Birdsell, 1958; Grueter et al., 2020; Hamilton et al., 2020; Roscoe, 2009). These structures introduce new coordination demands within groups and subject communities to inter-group selection pressures, where success depends on the ability to cooperate and to manage conflict with other groups (Boehm, 2000; Glowacki, 2022; Glowacki et al., 2020; Richerson et al., 2016; Wrangham, 2018).

Building on leadership and followership dynamics present among other primates and mammals, the distinctive social and organizational structures of human societies have amplified and reshaped the selection pressures acting on these traits (Van Vugt et al., 2008). For humans, leadership evolved to navigate the challenges of large, heterogenous groups, facilitating coordination and reducing collective action costs while also increasing the gains from sociality. Yet leadership is no panacea: the same disproportionate influence that can solve collective problems can also enable exploitation, creating evolutionary trade-offs between group welfare and leader self-interest (Lewis, 1974; Maner & Mead, 2010; Vaughn et al., 2010).

A comprehensive theory of human leadership must therefore explain how cultural and ecological context shape threats to group cohesion, identify the mechanisms individuals use to address these threats, account for variation in leadership-relevant traits, and weigh the costs and benefits for both leaders and followers. These are the challenges the MCL theory aims to address.

Limited Generalizability of Leadership Theory

Leadership theories in management and political science have been developed primarily from research in post-industrialized Western contexts (Dickson et al., 2012; Van Vugt & von Rueden, 2020), that is, WEIRD societies (Henrich et al., 2010). Even when these fields adopt comparative or cross-cultural approaches (e.g., Dickson et al., 2009; House, 2014), samples often come from a narrow set of industrialized nation-states, representing only a fraction of humanity's political, economic,

and social diversity. Consider transformational leadership theory, which emphasizes charismatic influence, promoting innovative thinking, and personalized attention (Bass & Riggio, 2005). This framework reflects assumptions about individualistic values and formal hierarchies that may be absent or take entirely different forms in kinship-intensive or egalitarian societies.

Beyond sample bias, much leadership research in management and political science overlooks the contextual and ecological diversity in which leadership emerges (cf. Johns, 2024; Lonati & Van Vugt, 2023; Prato et al., 2024). Despite often being implicitly or explicitly presented as universally applicable, such generalizations are typically unwarranted.

Sampling limitations also apply to much of psychology, where studies often rely heavily on student, online, or cross-national samples (e.g., Apicella et al., 2020; Hanges et al., 2016). Without ethnographic grounding, these approaches often miss leadership forms, such as ritual or spiritual authority, that shape social influence in many societies yet are less prominent in WEIRD contexts. Spiritual leadership is an interesting example. Shamanism—a widespread tradition in which practitioners engage with the supernatural, often through altered states of consciousness (Jakobsen, 2020; Singh, 2018)—remains a significant source of social influence in many rural and indigenous communities (Garfield et al., 2020; Singh, 2018; Singh & Garfield, 2022; Winkelman, 2020), and even appears in contemporary corporate contexts (Singh, 2022). However, leadership theory rarely incorporates frameworks for understanding these forms of leadership (see Fry, 2003, for a notable exception). [1]

The Multi-Capital Leadership Theory

The MCL theory explains why leadership emerges and why it varies among human societies and throughout individual life histories. It proposes that individuals become leaders when they draw on distinct forms of capital to provide benefits or impose costs on group members in ways that help resolve the challenges of group living while also producing net benefits for both followers and themselves. Building on previous work (e.g., Garfield, et al., 2019a; Garfield et al., 2020; Hagen & Garfield, 2019; Hagen et al., 2025; von Rueden, 2014, 2023; von Rueden et al., 2008, 2014, and many others), the MCL theory brings together findings from anthropology, psychology, economics, political science, and management, integrating them in a single model, towards explaining variation in leadership across societies. It identifies four main forms of capital: material, social, somatic, and neural (c.f. Borgerhoff Mulder et al., 2009; Bourdieu, 1986; Giddens, 1984) as the core resources that leaders use to influence others in various ecological and cultural contexts. Figure 1 illustrates this framework.

[1] In *The Leadership Quarterly*, the flagship journal for leadership studies across the social sciences and management, only nine articles mention "shaman" (three of which are by us), 29 mention "supernatural" (two of which are by us), and 149 mention "spiritual," across the 36 volumes which contain 4 to 6 issues per volume and 6 to 9 articles per issue.

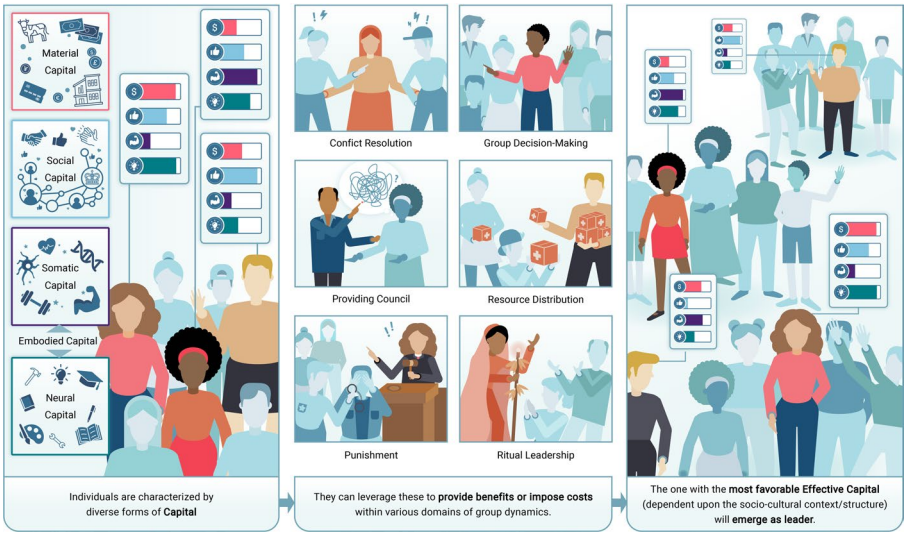


Fig. 1 The MCL framework illustrated

The MCL theory is grounded in three core assumptions. First, humans are obligated to group-living. Second, these groups are inherently heterogeneous, with individuals differing in their physical, informational, social, and economic resources. Third, both individuals and groups must continually solve recurring challenges of group living. Leadership emerges when some individuals are better able to deploy their resources (i.e., capital) to meet these challenges, such as reducing free-riding, resolving conflicts, managing competition, controlling disease, coordinating activities, and building consensus, providing benefits or imposing costs on potential followers. This framework aligns with and draws on Bastardoz and Van Vugt (2018)'s evolutionary account of followership, which views followers as individuals who lack the capital to pursue leadership effectively, and with Durkee et al. (2020)'s analysis of how benefit provision and cost infliction shape status hierarchies (see also Durkee & Lukaszewski, 2024).

In the MCL framework, "benefit generation" and "cost imposition" are not mutually exclusive, nor are they strictly aligned with prosociality versus coercion (cf. Durkee & Lukaszewski, 2024; Garfield et al., 2020). Leaders may impose targeted costs on some group members, for example, through sanctioning, coordination decisions, or norm enforcement, in ways that ultimately yield collective benefits. Punishing a ritual violation may uphold social cohesion even if the violation poses no immediate harm. Resolving a collective decision problem, such as where to construct a shared resource, can produce beneficial group outcomes despite imposing costs on some individuals whose preferences are unmet. These examples illustrate how an instance of leadership behavior can simultaneously result in both benefit provision and cost imposition, depending on perspective and level of analysis.

Mechanisms of benefit generation and cost imposition are highly diverse and often involve intertemporal trade-offs. Leaders may make unpopular decisions that promote long-term group benefits at the expense of short-term individual costs, such as

deterring overconsumption to build food storage, encouraging risky but necessary relocations, or mandating labor investments in communal infrastructure. In subsistence-based societies, these trade-offs are often shaped by ecological pressures, seasonal variability, and threats from neighboring groups. Leaders who navigate such challenges by leveraging persuasion, knowledge, social alliances, or resource control often succeed not by avoiding costs for followers and their groups but by allocating them strategically to enhance long-term individual and group success. This emphasis on strategic cost allocation helps to shift the focus away from dichotomies—i.e., coercion versus prestige, prosocial versus antisocial—toward viewing leadership as the strategic use of capital in ways that fit either or both the immediate or long-term contexts the group faces.

In the following sections, we define each form of capital, outlining how it enables leaders to generate benefits, impose costs, and navigate the trade-offs inherent to group living. We then review supporting evidence, including novel cross-cultural analyses, and show how the MCL framework integrates diverse leadership theories across the social and biological sciences (Antonakis, 2017).

The Multiple Types of Capital

We define *material capital* as the physical and economic resources an individual controls, such as food, land, territory, livestock, household goods, prestige items, and currencies. Although often transferable across generations and defendable against loss (Borgerhoff Mulder et al., 2009), its fungibility varies. For instance, ritual objects may hold high value yet be non-transferable or irreplaceable. Across societies, material wealth consistently predicts advantages such as high social status and reproductive success (Nettle et al., 2008; Stulp et al., 2012; von Rueden & Jaeggi, 2016).

Social capital has been defined in multiple ways across the social sciences (cf. Bourdieu, 1986; Guiso et al., 2006; Portes, 1998). Lyda J. Hanifan (1916) first used the term to describe goodwill, fellowship, and mutual sympathy as resources that enhance community life. Bourdieu later framed it as networks and institutions mobilized for power, whereas Putnam (1993) emphasized community engagement and network interconnectedness (Siisiainen, 2003). Many contemporary approaches follow Lin (2001), defining social capital as resources embedded in social structures (e.g., Redhead & Power, 2022). Here, we distinguish relationships themselves from the resources they provide access to, defining social capital through four interrelated elements: (1) network size—the number of ties an individual maintains (Hruschka, 2010; Marsden & Lin, 1982); (2) tie strength—the durability, intimacy, and reliability of those connections (Friedkin, 1980; Sundararajan, 2020); (3) the status of others within the network; and (4) the individual's own social status or prestige (Blader & Chen, 2014; von Rueden, 2024a).

Unlike Bourdieu (1987, 2016), who distinguishes social ties from social standing (his "symbolic capital"), we treat them as components of a single construct. This integration reflects, first, how social capital operates across diverse societies where network size, prestige, tie strength, and relational quality are interrelated and mutually reinforcing. Second, it serves theoretical parsimony as these dimensions are more closely related to one another than to other forms of capital (material, somatic, or

neural), making their unification both conceptually coherent and analytically useful. This approach supports broad cross-societal comparisons without adding unnecessary complexity.

Embodied capital, as used in biological anthropology, refers to organized somatic tissue that supports physical and cognitive capacities (Kaplan et al., 2003a, 2003b; Mattison et al., 2016). We distinguish two forms. *Somatic capital* encompasses physical attributes such as formidability, height, attractiveness, and immune function. *Neural capital* refers to cognitive, informational, and psychological resources (Garfield et al., 2019a; Kaplan et al., 2003b; Neel, 1980).[2] For leadership, neural capital includes abilities in information processing, empathy, adaptability, personality, theory of mind, intelligence and emotional intelligence, and prediction, as well as domain-specific expertise—ranging from ecological knowledge for hunting and tactical insight for warfare, to ritual fluency, kinship norms, and other culturally embedded systems of meaning essential for navigating social life (Garfield & Lew-Levy, 2025; Hagen et al., 2025; Leslie et al., 2004; Mayer & Salovey, 1997; Van Vugt & Kurzban, 2007). Although greater neural capital enables leaders to read the dispositions and motivations of their followers, navigate cultural systems, anticipate outcomes, and mobilize action to meet group challenges, too much intelligence can also detract from perceptions of leadership ability when it undermines the relatability of followers (Antonakis et al., 2017).

We include personality under neural capital because it stems from individual psychological traits. Personality, however, may operate differently from other components in this category. Unlike knowledge or problem-solving skills, which can be learned, built up over time, and deliberately improved, traits such as agreeableness, extraversion, or assertiveness are relatively stable dispositions. Nonetheless, we acknowledge growing evidence that personality is not fixed and can change through sustained, intentional efforts—often by systematically altering the situations we encounter or how we interpret them—though such changes are typically gradual, modest in scale, and require substantial commitment (cf. Bleidorn et al., 2022; Jackson & Wright, 2024). Personality also plays a dual role in leadership dynamics, affecting both actual performance and follower perceptions, with potential for exaggeration or misrepresentation (see "Social Comparison and Leader Selection" section). Thus, personality tends to predict leader emergence better than leader effectiveness (Judge et al., 2002a, 2002b). Personality may represent a distinctive subcomponent within neural capital—biologically influenced, socially constrained (Durkee et al., 2022; von Rueden et al., 2015a, 2015b), and only partially subject to capital-like investment—warranting further theoretical refinement within or alongside the MCL framework (see Bastardoz, 2020; Grabo & Van Vugt, 2016; Jackson & Wright, 2024; Lukaszewski et al., 2020; von Rueden et al., 2015a, 2015b).

[2] Neural capital incorporates what Bastardoz & Van Vugt (2018) term psychological and knowledge capital, what Mattison et al. (2023) describe as neotic wealth, and what others define as epistemic capital.

Contextual Demands of Leadership

The MCL theory proposes that effective leadership depends on deploying specific forms of capital to generate benefits or impose costs within distinct social domains. These domains are shaped by socio-cultural context, group structure, follower preferences, and the presence of potential competing leaders. Drawing on Smith et al.'s (2016) comparison of leadership across non-human animals and small-scale human societies, as well as cross-cultural research among nonindustrial societies (Garfield et al., 2020), we identify and analyze seven recurring arenas where leadership emerges: conflict resolution, providing counsel, organizing cooperation, punishment, group representation, resource distribution, and ritual leadership (see "Novel Analyses of Quantitative Ethnographic Data" section).

These domains capture the central challenges of social living whose resolution often depends on the emergence of leaders and followers (Garfield et al., 2020; Garfield et al, 2019a, 2019b; Lewis, 1974; Van Vugt, 2006; Van Vugt & Kurzban, 2007; von Rueden et al., 2015a, 2015b). Understanding how these domains shape leadership requires examining the market-like dynamics that govern leader emergence.

Leadership and Biological Markets

Markets for leaders are an example of the broader phenomenon of biological markets (Hammerstein & Noë, 2016; Noë & Hammerstein, 1995), which describe social interactions as market-like exchanges in which organisms trade resources, services, or information according to supply and demand. In the MCL framework, each social context that presents collective challenges or coordination problems can be understood as its own market. Within these markets, the dynamics of supply, demand, and competition shape who emerges as a leader, as well as the strategies and forms of capital they use to gain and maintain influence.

Leaders gain influence by acting as service providers, deploying their capital to shape group outcomes—whether by resolving disputes, providing protection, securing resources, or sharing information—while at times imposing necessary costs on some members through punishment or resource control to benefit others. Followers often pay a "tax" for accepting this disproportionate influence, such as material payments (Hooper et al., 2010). In other cases, benefits may be delayed or reputational, translating into future social or reproductive advantages (Garfield et al., 2020, 2021; Price & Van Vugt, 2014; von Rueden & Jaeggi, 2016). In more egalitarian settings, leaders may incur net direct costs (Seabright, 2022; von Rueden et al., 2014), which can be offset—or not—by delayed, indirect personal benefits. Frequently, leaders also share in the collective gains their leadership produces, such as reduced conflict, enhanced cooperation, or improved coordination, giving them an incentive to bear these costs voluntarily, even without immediate personal returns (cf. Diekmann, 1985; Queller, 2011). These market-like exchanges determine who attains influence, depending on the demands of the group, the pool of potential leaders, and the broader socioecological context (Henrich et al., 2015; Hooper et al., 2010; Lonati & Van Vugt, 2023).

A leader's ability to maintain disproportionate influence depends on ensuring that the net benefits to followers—including those arising from necessary cost imposition, such as punishing norm violators—outweigh the burdens their leadership may entail, such as resource consumption, reproductive advantages, or privileged access to protection (Hagen & Garfield, 2019; Hooper et al., 2010). The qualities that enable such influence are context dependent. During external threats, for example, groups may grant greater decision-making authority to individuals who can mobilize defense through dominance-based traits and military expertise, accepting some degree of exploitation in exchange for security (Glowacki et al., 2020; Hasty & Maner, 2023; Kakkar & Sivanathan, 2017; Laustsen et al., 2025; Spisak et al., 2012). In contrast, when facing internal discord, groups may prefer leaders who combine prestige-based mediation skills with enough formidability to enforce agreements and sustain cohesion (Fitouchi & Singh, 2023; Garfield, 2021; Singh & Garfield, 2022). These cases highlight that traits often portrayed as belonging to distinct leadership styles—such as dominance versus prestige (Cheng et al., 2010; Henrich & Gil-White, 2001) or transformational versus transactional leadership (Avolio et al., 1999)—frequently operate together to facilitate social influence within particular domains (cf. Durkee & Lukaszewski, 2024; Garfield & Hagen, 2024; Garfield et al., 2019a; Pietraszewski, 2020; von Rueden, 2014; Wiezel et al., 2024, see also "Comparison to Dual Pathway Models, Other Models, and Theoretical Synthesis" section).

Coalitional Structures and Leadership Maintenance

Leaders do not operate in isolation. Their influence typically emerges from and is sustained by coalitions of allies, supporters, and co-decision makers (Pearce & Conger, 2002; Pietraszewski, 2013). These coalitionary dynamics shape both the emergence and persistence of leadership by structuring the social and biological markets within a given group or context. In smaller-scale societies, coalitions are often broad and relatively flat, grounded in social and somatic capital such as trust, kinship ties, physical formidability, and interpersonal reciprocity (e.g., Patton, 2005; Redhead & von Rueden, 2021). In more hierarchical or resource-stratified settings, by contrast, material capital can substitute for broad-based support, enabling leaders to maintain power through smaller, more tightly controlled coalitions.

These dynamics are consistent with evolutionary and political models that view leadership as contingent on coalitionary support. Across species, coalitions regulate access to power and social status, shaping individual strategies in competitive contexts (Bissonnette et al., 2015). Political models likewise predict that the size and composition of a leader's core supporters influence how benefits are distributed: smaller coalitions allow leaders to act with greater impunity, while larger ones require broader prosocial investment to sustain support (cf. Bueno de Mesquita et al., 2003). Coalitionary leadership also highlights the dual nature of cost imposition. Leaders may use coercion to protect coalition interests or suppress dissent, which can preserve cohesion within the coalition but risks undermining wider collective welfare. These tensions, between serving a tight circle of allies and serving the wider group, show why the same leadership strategy can be effective in one setting and divisive in another.

The Complexity of Social Influence

The MCL framework moves beyond contrasts between distinct leadership styles, offering more nuanced predictions about leader emergence and effectiveness. It treats leadership as a strategic response to social pressures that shape how individuals generate benefits and impose costs within heterogeneous groups. This multi-capital perspective also sheds light on mechanisms of social influence across species. For example, in many primate social systems, high-ranking individuals maintain their positions not only through physical formidability and overt displays of strength, but also by cultivating alliances—grooming partners, providing protection, and fostering social cohesion in exchange for support (Alexander, 1974; Burkart et al., 2018; Chapais, 2015; de Waal & Suchak, 2010; Tomasello, 2019).

Similarly, the ethnographic record shows that successful leaders frequently navigate overlapping and sometimes conflicting group interests, strategically deploying multiple forms of capital to secure and maintain follower allegiance (Garfield et al., 2019a, 2019b; Lewis, 1974; Price & Van Vugt, 2014); see also the Supplementary Information (SI) "Qualitative Ethnographic Evidence" section for a detailed review of ethnographic cases. Framing these dynamics within biological market theory clarifies how leader attributes (including ontogeny), follower needs, and situational challenges interact to shape the emergence, maintenance, and effectiveness of leadership. Although operationalizing qualitatively distinct leadership styles or syndromes (e.g., autocratic, transformational, authentic, prestige, charismatic) can be useful, it often obscures important variation and complexity in leadership phenomena.

Social Comparison and Leader Selection

The MCL framework anticipates which forms of capital should enable effective leadership in particular domains. Yet leader emergence is not always determined by actual effectiveness. When social comparison is imperfect—when followers lack sufficient information to evaluate leadership behaviors or outcomes—individuals may instead rely on perceived cues of capital as heuristics. Perceived intelligence, social connectedness, or confidence may shape leadership preferences even when such perceptions diverge from actual capacities. For example, physical appearance has a larger effect on leader preference among less-knowledgeable voters, and dominance behaviors can be misperceived for competence in newly acquainted groups (Anderson & Kilduff, 2009; Lenz & Lawson, 2011). In these situations, an MCL theoretical approach may better account for who becomes a leader than for how effective they are once in that role. This distinction underscores the role of reputation, signal clarity, and contextual conditions in shaping how capital is converted into influence (Garfield et al., 2021; Macfarlan et al., 2013; von Rueden et al., 2014).

Furthermore, the self-reinforcing nature of social influence—also known as the Matthew Effect—can cause leader–follower hierarchies to diverge from what would be expected based solely on actual capital endowments (von Rueden, 2024b). Several mechanisms contribute to this divergence. First, influence is often granted to those already recognized as leaders, especially when quality is hard to evaluate (Gould,

2002; Henrich & Gil-White, 2001). Leadership credentials—whether formal (e.g., titles, certifications) or informal (e.g., reputation)—can magnify initial differences in perceived capital beyond actual differences in benefit-generation capacity. Second, those who fail to acknowledge established leaders may face social sanctions (Price & Van Vugt, 2014; Ridgeway, 2019). Third, incumbents can shape which forms of capital are valued in ways that reinforce their own position. Finally, attaining leadership often creates positive feedback loops between capital types—for example, when social influence facilitates access to material resources or high-status allies (Askin et al., 2015; Lin, 2001).

These Matthew Effects in leadership are shaped by the structure of social networks and patterns of interaction (von Rueden, 2024b). When individuals preferentially engage with others of similar status, hierarchies tend to steepen (Dávid-Barrett & Dunbar, 2014). By contrast, cross-status interactions can diffuse leadership more broadly, allowing hierarchies to better reflect actual differences in capital and capacity for benefit generation (Bothner et al., 2010). For example, among Tsimane forager–horticulturalists in the Bolivian Amazon, men did not preferentially cooperate with others of similar status; instead, lower-status individuals gained influence over time through cooperation with high-status men (von Rueden et al., 2019). This pattern suggests a market-like competition both among potential leaders seeking followers and among followers pursuing beneficial ties to leaders.

The MCL framework underscores the many pathways through which individuals gain social influence across cultures and contexts, offering a lens for understanding the emergence of leadership and followership across societies and even species. It also highlights a key qualification: while certain forms of capital may objectively enhance leadership effectiveness in specific domains, who emerges as a leader depends on followers' ability to assess others' capital and capacity for benefit generation—making social context and biological market dynamics central to the process.

Sex, Gender, and Leadership Through a Multi-Capital Lens

A multi-capital perspective also offers a more holistic lens for the study of sex and gender in leadership, by examining (1) whether certain contexts make men's or women's capital profiles more likely to drive benefit generation or cost imposition, and (2) how those contexts shape men's and women's access to capital in the first place—including how gender norms influence follower perceptions. Relevant contexts include a society's subsistence economy, the gendered division of labor, the degree of inter-group conflict, and kinship and descent systems (Kramer, 2022; Low, 1992; Rodseth, 2012). Historically, women have been most likely to acquire formal political leadership in societies with matrilineal descent and matrilocal residence norms (Low, 1992), whereas patriarchy often intensified with agricultural intensification, economic surpluses, and the spread of patriliny and patrilocal residence—processes linked to men's investments in male offspring and large-scale coalition building, often in contexts of warfare (Boone, 1986; Low, 1992; Smuts, 1995).

From this perspective, observed gender differences in leadership may often reflect variation in specific capital endowments—or in their perception—rather than gender

per se (cf. Garfield & Hagen, 2020; von Rueden et al., 2018; Wiezel et al., 2024). In many cases, distributions of capital profiles across men and women overlap substantially, making gender-stratified framings less informative and potentially misleading. Comparative ethnographic work supports this view: in Tsimane horticulturalists, for example, men's greater political influence is partly due to their broader cooperation networks, shaped by a gendered division of labor, yet the strongest predictors of political leadership—body size and strength, formal education, and number of cooperation partners—are the same for men and women (von Rueden et al., 2018). Similar patterns are found among Himba pastoralists (Prall & Scelza, 2024) and recently settled hunter-gatherers in Ethiopia (Garfield & Hagen, 2020). By emphasizing the interplay of follower perceptions, context, and Matthew effects, the multicapital framework helps explain why individuals may succeed or struggle in contexts where the most influential forms of capital align with gendered expectations, while also accommodating the non-binary and culturally specific gender categories common across human societies (Hames et al., 2017). Rather than focusing on "male-typical" or "female-typical" strategies (e.g., Eagly & Johannesen-Schmidt, 2001), this approach highlights the diverse pathways through which individuals of different sexes and genders gain influence, prompting a reassessment of what truly constitutes gender-specific leadership strategies.

We now review some empirical evidence supporting the MCL framework, framing findings in terms of capital investments and their returns, with additional ethnographic descriptions provided in the SI ("Qualitative Ethnographic Evidence" section).

Capital Investments and Returns in Leadership

In the MCL framework, leadership emergence can be viewed as a function of interindividual variation in forms of capital that allow individuals to produce group benefits and the group's need to solve specific challenges. Differences in leadership capacity often arise from uneven investments—whether deliberate or incidental—in these forms of capital, which in turn shape opportunities for leader–follower relationships. Drawing on evidence from rural subsistence-based communities, organizational contexts, and experimental studies, we examine how leaders "invest" in capital and the context-dependent returns those investments generate.

Capital Investments Across Contexts

Leaders may "invest" in multiple forms of capital that contribute to their capacity for influence; however, individuals do not always build capital to become leaders. Many cultivate social ties, material resources, or skills for other reasons, and later find that these assets position them for leadership. In rural, subsistence-based societies, where social life is shaped by face-to-face interactions, kinship ties, and subsistence economies, emerging leaders typically display strong social alliances, extensive networks, and culturally specific expertise. Among Tsimane, for example, informal leaders have superlative task-specific knowledge and maintain wide cooperative networks (von Rueden et al., 2008, 2014, 2018). Similarly, among Chabu forager–horticulturalists

in the highland forests of southwest Ethiopia, elected leaders are recognized for intelligence, sound judgment, conflict mediation skills, generosity, and domain-specific knowledge (Garfield & Hagen, 2020, 2024).

In industrial–organizational settings, capital investments often emphasize formal credentials and deliberate network cultivation. Status-motivated individuals tend to expand their networks strategically (Burt, 1984; Wasserman & Faust, 1994), especially when status is viewed as a reliable signal of quality (Cao & Smith, 2021). As organizational complexity increases, leaders devote greater effort to developing skills for processing and managing complex information and reconciling diverse perspectives (Antonakis et al., 2009; Bass, 2009). Findings from the GLOBE project—surveying over 15,000 managers in 60 countries—show that investments in cognitive and interpersonal capabilities, especially those that facilitate articulating a clear vision and building trust, yield consistent returns across cultural contexts (Den Hartog et al., 1999). However, these returns are far from uniform. Meta-analyses demonstrate that the links between personality-related variation and leadership effectiveness vary markedly by occupational setting (Judge et al., 2002a, 2002b) and by cultural context (Javalagi et al., 2024). For example, extraversion may be a stronger determinant of leadership in newly acquainted groups than in bureaucracies with explicit promotion criteria, and in collectivist societies more than more individualistic ones.

Physical capital investment also matters. Among the Tsimane for example, physical strength associates modestly with leadership in both women and men (von Rueden et al., 2018) and may enhance leader effectiveness both directly—by enabling norm enforcement—and indirectly through personality-linked effects (von Rueden et al., 2015a, 2015b). In corporate environments, leaders often manage their physical presentation strategically to meet follower expectations for formidability (Ford et al., 2017). In labor markets, taller individuals are more likely to emerge as leaders and enjoy greater career success (Judge & Cable, 2004), a height premium that may partly stem from adolescent socialization processes (Persico et al., 2004).

Returns on Leadership Capital

The benefits of particular forms of leadership capital depend on the economy of the society, the structure of its social relationships, and how accurately people can judge one another's capacities (see "Social Comparison and Leader Selection" section). Investments in leadership-relevant capital tend to yield reproductive benefits even among the most egalitarian societies (von Rueden & Jaeggi, 2016), although the magnitude of reproductive and especially economic benefits tends to expand with the scale and material wealth of societies (Betzig, 1986; von Rueden, 2023).

Leadership often constitutes a high-risk, high-return strategy. Although leaders frequently gain material advantages, increased social status, and greater mating opportunities relative to followers, they also face heightened risks of resource loss and reputational damage—particularly when their decisions are perceived as illegitimate or procedurally unfair (Bøggild & Petersen, 2016). Some people actively build capital to compete for leadership and its rewards; others take on leadership roles because resources or skills they developed for other purposes make them effective leaders (Garfield et al., 2019a, 2019b). Comparative data suggest that, in most

societies, the benefits of leadership more often outweigh its costs. In an ethnographic sample of 59 diverse nonindustrial societies with systematic data on leadership costs and benefits, leaders were more than three times as likely to experience benefits than costs, with the most pronounced advantages in material wealth, social influence, and reproductive opportunities (Garfield et al., 2020).

Novel Analyses of Quantitative Ethnographic Data

To systematically assess how different forms of capital relate to leadership across domains, we draw on the leadership data package (Garfield & Hagen, 2019), a dataset of researcher-coded measures of leadership from a systematic sample of ethnographies on nonindustrial societies. The dataset comprises 1,212 ethnographic text records (paragraphs) from the electronic Human Relations Area Files World Cultures database (eHRAF), covering leadership in 59 societies, which have been coded by researchers for evidence of various leadership dimensions (for detailed descriptions of these data see Garfield, et al., 2019a). Our analyses focus on the seven aforementioned leadership domains: conflict resolution, providing counsel, organizing cooperation, punishment, group representation, resource distribution, and ritual leadership.

We operationalized the four types of capital using variables available in the *leadership data package*. Table 1 provides the operational definitions for each leadership dimension linked to a given capital type. These are imperfect operationalizations in reference to the definitions we previously offered, but are constrained by the measures available in this dataset. Each paragraph in the dataset was coded as 1 for a capital type if it contained supporting evidence for any leadership dimensions associated with that type. We use descriptive statistics to examine the relationships between these capital types and the seven leadership domains, extending results reported by Garfield et al. (2020).

Figure 2 shows the relative frequency of each capital type across the seven leadership domains (see Table S1 for values). Overall, evidence for social and neural capital is substantially more common. This pattern could reflect the broader importance of these forms of capital for leadership across cultures, leading ethnographers to describe them more often. Alternatively, material and somatic capital may be underrepresented due to features of the ethnographic record or because the present sample did not capture contexts where they are most salient. Given these limitations, our analysis emphasizes broad, relative patterns—when a capital type is documented, we examine the domains in which it most frequently appears.

Focusing on broad, relative patterns across leadership domains (Fig. 2), social and material capital are most often emphasized when leadership involves resource distribution and organizing cooperation. Neural capital is more frequently associated with providing counsel, resolving conflicts, enforcing punishment, and ritual leadership. The domains of punishment, conflict resolution, and group representation show the most diverse capital profiles, being relatively more often linked to all four forms of capital. Some capital types—particularly somatic and material—may appear less often in the ethnographic record, not because they are unimportant, but because the situations in which they are most relevant, such as physical contests, warfare, or acute resource cri-

Table 1 Capital types and associated leadership dimensions. Leadership dimensions and definitions from Garfield et al. (2020)

Capital type	Leadership dimension	Definition
Social capital	High Status	The leader is described as having high social status, prestige, or held in high esteem
	Social Contacts	The leader has many social contacts or allies
	High-Quality Spouse	The leader is married to a high-status or high-quality spouse(s)
	Loyalty	The leader demonstrates loyalty to the ingroup or important members of the in-group
Neural capital	Decisiveness	The leader makes decisions swiftly or has a reputation for good decision-making abilities
	Knowledgeable/Intelligent	The leader is known for superior intelligence, knowledge, cognitive functioning, specialized education, wisdom, or esoteric knowledge
	Strategic Planner	The leader makes decisions/plans for the future relying on their knowledge and intellect to improve outcomes for the group; considers outcomes strategically
	Oratory Skill	The leader is a good public speaker, eloquent, demonstrates high oratory skill, or forceful/persuasive speaking abilities
	Experienced/Accomplished	The leader has increased/specialized expertise relative to followers or has a reputation for successful and notable accomplishments
	Supernatural skills	The leader is perceived to possess supernatural qualities/abilities
	Interpersonal Skills	The leader works well with people and can effectively manage social relationships
	Artistic Performance	The leader is an artistic performer for followers, e.g., song, dance, and other artistic performances
	Charisma	The leader is described as charismatic, able to motivate followers with their personality
	Favorable Personality	The leader is described as having an ideal personality for the required context
Material capital	Wealthy	The leader is wealthier than followers including cash, material or other economic wealth measures
Somatic capital	Physical Health	The leader is physically healthy
	Physically Strong	The leader is physically strong, large in size, or physically formidable
	Attractive	The leader is described/perceived as being physically/sexually attractive

ses, occur less frequently and are less likely to be captured in ethnographies. Yet when these events do occur, they can have outsized consequences for groups, suggesting their evolutionary importance may exceed their visibility in the sample. In a sense, the patterns we observe in the data represent the outcome of long histories in which human communities developed cultural norms and selected for the traits needed to solve such challenges, even if the selective events themselves are rare in the present record.

The *leadership data package* also includes researcher-coded measures of specific costs and benefits to followers in leadership contexts. These capture evidence for

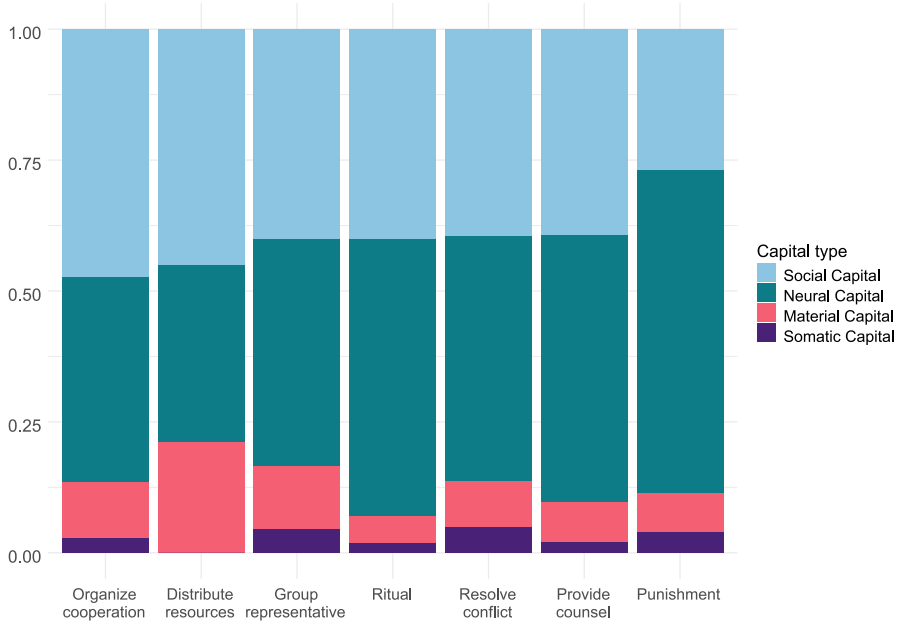


Fig. 2 Relative level of support for capital type within leadership domain. The height of each colored bar represents the proportion of evidence for leaders with each type of capital

eight outcomes: access to food, material resources, non-material benefits, risk of harm, social services, social status, inclusive fitness, and mating opportunities. To visualize relationships between leader variation and follower outcomes, we produced an alluvial plot (Fig. 3) showing the "flow" from each form of leader capital to follower benefits and costs. In this plot the width of each stream is proportional to the number of ethnographic texts linking a given capital type to a specific follower outcome, illustrating how each capital type channels into either benefits or costs.

To explore how each form of capital relates to the others and to follower outcomes, we generated UpSet plots (Conway et al., 2017) for each leadership domain. These plots show intersections among our six focal elements: four capital types, follower benefits, and follower costs. As shown in Fig. 4, leaders' neural, social, and material capital are associated with benefits to followers in conflict resolution, counsel, and ritual leadership. In organizing cooperation, social capital is most often tied to benefit generation. In resource distribution, benefits are most commonly linked to material and social capital, while in administering punishment, benefits are most often associated with social capital.

Mechanisms and Predictions

Our most general prediction is that distinct forms of capital drive leader emergence and followership by enabling leaders to deliver benefits or impose costs, with their impact shaped by social and cultural context. Drawing on our theoretical framework,

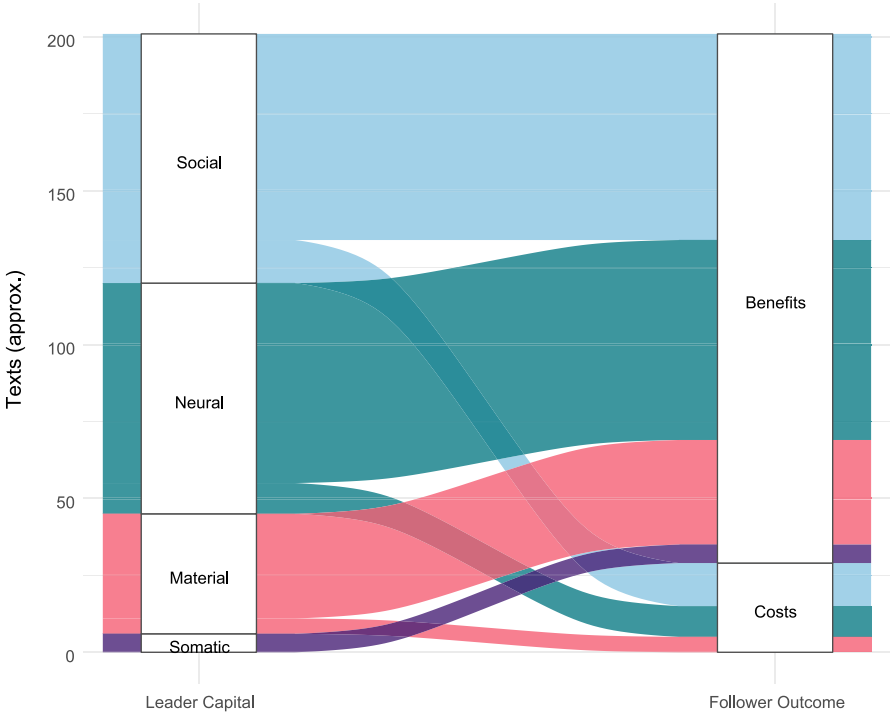
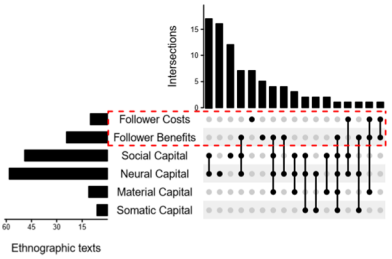


Fig. 3 Alluvial plot showing the flow from leader capital types to follower benefits and costs. Stream widths are proportional to the number of ethnographic texts linking a given capital type to a specific follower outcome

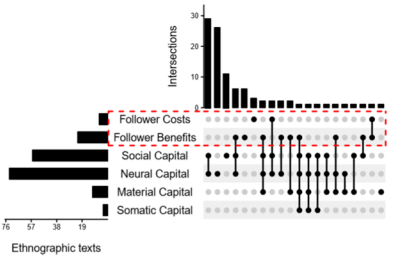
the ethnographic patterns reported above, and the qualitative ethnographic evidence reviewed in the SI ("Qualitative Ethnographic Evidence" section), we outline mechanisms by which each capital type may operate and present generalized predictions. These predictions are not intended as fixed, stand-alone hypotheses; rather, they offer a flexible, context-sensitive framework from which more specific, testable predictions can be developed for particular settings. They serve as a first principles starting point and a set of conceptual building blocks that can be refined, expanded, or revised through further empirical work, formal theoretical models, or computational models. In doing so, they aim to clarify when and why one form of capital should confer greater influence than others, conditional on factors such as group needs, structure, and social domain.

Investment Mechanisms and Returns

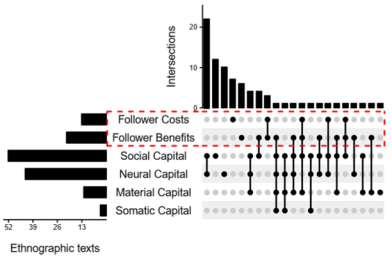
Social capital facilitates leadership emergence and returns through network effects and coalition maintenance. By investing in relationships, leaders create a foundation of trust and reciprocity that allows them to mobilize support and coordinate action across subgroups (Redhead & Power, 2022). In our ethnographic sample, social capital is most strongly associated with leadership in resource distribution, organizing



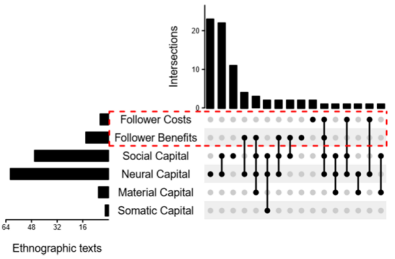
(a) Resolve Conflict



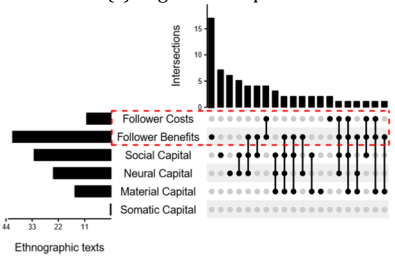
(b) Provide Counsel



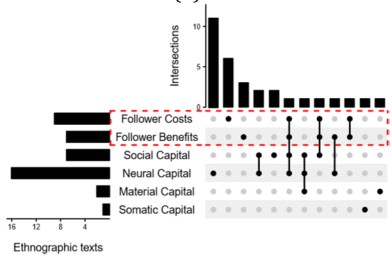
(c) Organize Cooperation



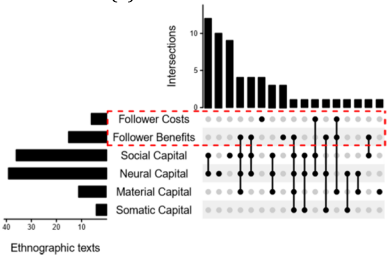
(d) Ritual



(e) Distribute Resources



(f) Punishment



(g) Group Representative

Fig. 4 Relationship between capital types and follower costs and benefits within each leadership domain. UpSet plots show how four forms of leader capital overlap with follower **benefits** and **costs** among texts coded for each domain. Rows list variables/sets; *left bars* give the total number of ethnographic texts providing evidence for each variable type (counted regardless of overlap). Columns encode intersections; *filled dots* mark which variables are present in that combination/intersection, and *top bars* give the number of texts in that intersection. We display intersections that involve ≥ 2 sets and at least 2 texts (single-set columns may also appear for reference). The *dashed red box* highlights the follower-oriented rows (*Follower Benefits* and *Follower Costs*)

cooperation, and enforcing punishment (Fig. 2), underscoring its value in contexts where broad consensus or coordinated enforcement is essential. These advantages tend to be stronger when group members rely heavily on one another, and weaker when the group is fractured, distributed, or when sudden disruptions or other factors make it harder for a leader to maintain relationships across factions.

Neural capital contributes to leadership by improving decision-making and managing the flow of important information. Leaders with high neural capital can offer counsel others cannot, develop better solutions to collective problems, and draw on expertise—including supernatural or ritual knowledge—to strengthen their authority (Garfield & Hagen, 2020; Hagen et al., 2025; Singh, 2018). In our ethnographic data, neural capital is most often linked with counsel, conflict resolution, punishment, and ritual leadership (Fig. 2), pointing to its value in socially complex and interpretive decision-making contexts. Its returns often build over time, as accumulated expertise becomes more important in situations where high-stakes or uncertain decisions depend on trusted guidance.

Material capital generates leadership benefits primarily through reciprocity and signaling. Investments such as hosting feasts (Wiessner & Schiefenhövel, 1996) or sponsoring public works signal both resource-holding capacity and a willingness to share, fostering loyalty, expanding coalitional support, and shaping future resource flows. In the ethnographic record, material capital most often appears in leadership roles tied to resource distribution and organizing cooperation (Fig. 2), underscoring its importance when followers receive direct, tangible benefits. These advantages tend to grow in contexts where material scarcity heightens the value of such investments, but they may weaken when alternative sources of goods are accessible or when the distribution of critical resources is unpredictable or uneven.

Somatic capital operates through direct means that enable leaders to generate benefits or impose costs via physical presence. Although less consistently influential among humans than in many other social species, our ethnographic data link somatic capital to leadership in punishment, conflict resolution, and group representation (Fig. 2). In egalitarian settings—especially under conditions of norm enforcement or external threat—physical traits can be an important source of influence (Lukaszewski et al., 2016; Redhead et al., 2021). These advantages may be relatively short-lived, however, as physical capacities decline with age, prompting leaders to replace or supplement somatic capital with other forms. It is notable that, although evidence for somatic capital is limited, it is more likely to be associated with benefits to followers rather than costs (Fig. 3). While we do not doubt that physical formidability has often been linked to cost imposition over evolutionary history, the ethnographic evidence challenges perspectives that treat dominance or physical strength as exclusively tied to imposing costs, or that underestimate its potential role in generating benefits (cf. Durkee & Lukaszewski, 2024; Van Vugt & Smith, 2019; Wiezel et al., 2024).

Context-Specific Predictions

The following outlines broad expectations for when each form of capital is most likely to confer influence. These are meant as adaptable starting points that can be refined into context-specific, testable predictions once the socio-cultural and situ-

ational parameters are clear. We first describe expected context-dependent returns for each capital type, then consider how different forms of capital may interact, the domain-specific strategies leaders might pursue to optimize their influence, and the likely trajectories by which capital profiles change over time.

Context-Dependent Returns:

• Material capital is most impactful where valued resources are scarce or concentrated, and leaders can use them to reward allies or fund collective activities; it is less influential when goods are abundant, stochastic, or distribution is strictly regulated.
• Social capital has the greatest payoff where cooperation depends heavily on trust, reciprocity, and personal networks—particularly where formal enforcement is weak.
• Neural capital is especially advantageous in large or complex groups where decision-making is challenging, stakes are high, or specialized expertise is needed.

Interaction Effects: Different forms of capital can combine in ways that amplify their individual utility. These complementarities are likely to be especially important when the demands of leadership span multiple domains or require both relational and instrumental strengths:

- Social × Neural capital may jointly improve conflict resolution, where building consensus depends on both trust and problem-solving skill.
- Material × Social capital can produce multiplicative benefits in resource distribution, pairing tangible goods with relationship-based influence.
- Somatic × Social capital can strengthen authority in punishment contexts, where physical presence is reinforced by broad coalition support.

Domain-Specific Optimization: Capital forms are likely to be especially important when they align with the demands of a leader's primary domain:

- Ritual leaders should prioritize neural capital, as specialized knowledge and perceived supernatural capacities enhance ceremonial authority and the ability to convey ritual meaning.
- War leaders should balance somatic capital for physical capability with social capital for mobilizing allies and sustaining coordinated action.
- Economic leaders should combine material capital with social capital to manage exchanges, coordinate redistribution, and maintain legitimacy.

Return Trajectories: Forms of capital should differ in how their returns change over time:

- Neural capital returns should increase as accumulated expertise compounds.
- Somatic capital returns should peak early and decline with physical aging.
- Social capital returns should compound through network expansion and reciprocity over time.

- Material capital returns should scale with institutional complexity, where formal systems amplify resource leverage.

These predictions explain both how leaders emerge and why certain leadership forms endure or fade, linking individual gains to a leader's ability to solve collective problems. As an adaptable framework, they offer a foundation for refining context-specific and testable predictions.

Comparison to Dual Pathway Models, Other Models, and Theoretical Synthesis

The MCL framework integrates and synthesizes multiple leadership theories. Our motivation parallels the work of Tverskoi et al. (2023), which sought to disentangle the roles of material, social, and cognitive features of human sociality. They developed a dynamic mathematical model to capture how these factors interact in shaping behavior and beliefs. Their results showed that individual actions, norms, and expectations are interdependent, with cognitive aspects (e.g., personal norms) and social elements (e.g., conforming to expectations) exerting greater influence on decision-making than material incentives or peer approval. The MCL framework is consistent with these findings: in some contexts, neural and social capital appear more important for leadership than material and somatic capital and are more frequently represented in the ethnographic record—though these relationships remain conditional on social context.

The MCL framework also incorporates and helps explain variation in "cultural leadership prototypes," or the attributes and behaviors collectively valued and expected of leaders within a society, as described by Lonati & Van Vugt (2023). Their model outlines how particular ecological conditions favor specific leadership strategies. The MCL framework extends this approach by identifying the forms of capital that underlie leader emergence in distinct social domains, not only between societies but also within them.

Ideas within the MCL framework have deep roots. Mumford (1906) examined the origins of human leadership drawing on non-human animal data and interdisciplinary perspectives in a Darwinian tradition, arguing that both social and psychological components, as well as the dependence of leadership on social context, shape leadership behavior. Kracke's (1978) ethnographic work in an Amazonian society concluded that social influence rests on two distinct capacities: force and persuasion. Integrating contemporary theories of social control and power, Giddens (1979) proposed that the "dialectic of control" between agents—their ability to modify each other's behavior—derives from their capacity to mobilize various forms of capital, including material resources and social class.

The work of Blader and Chen on status and power also aligns with the MCL approach. In discussing the "antecedents of social rank," Blader & Chen (2014) note that there are multiple ways actors can demonstrate value to the group, meaning distinct forms of capital can promote social influence. As previously noted, the MCL framework builds on von Rueden (2014), who argued that embodied, material, and

social capital underlie variation in dominance and prestige, which in turn shape status hierarchies. Roscoe et al. (2020) likewise define power as the capacity to shape outcomes by influencing others' actions, exercised through economic, social, cultural, and symbolic capital to persuade, compel, or alter behavior. Roscoe et al., (2020, p. 2) also suggests that "human ingenuity and cultural structures generate myriad capitals that confound precise clarification." Together, these perspectives and the MCL framework extend the trait-leadership model from management (Zaccaro et al., 2018), which views leadership as emerging from personal attributes that differentiate individuals and foster effective social influence across diverse teams and organizational contexts.

Beyond Dual-Pathway Models

The MCL theory, and much of our leadership research, builds on and is inspired by the dominance–prestige theory (or dual-pathway model) of social status and influence (for review see Garfield and Hagen, 2020; Garfield et al., 2019a, 2019b; Hagen & Garfield, 2019; Jiménez & Mesoudi, 2019; von Rueden, 2014, 2024a). Its conceptual roots trace back to early anthropological and evolutionary accounts, including Mead's (1935) portrayal of leaders in small-scale societies as "big men" who combined aggression and intimidation with respect and admiration to gain and maintain influence. Kracke's (1978) force versus persuasion framework likewise contrasts dominance-based and prestige-based leadership. Early evolutionary theoretical work by Tiger (1970) and Barkow et al. (1975) proposed distinct mechanisms for these routes: dominance grounded in a primate legacy of physical competition (in the former), and prestige arising from uniquely human competition in prosociality, expertise, and symbolic knowledge (in the later).

This foundation laid the groundwork for the contemporary dominance–prestige (or dual-pathway) framework, crystallized in two influential papers by Henrich and Gil-White (2001) and Cheng et al. (2010), which formalized the contrast between coercive and intimidation-based dominance strategies and prestige strategies rooted in symbolic culture, generosity, cultural expertise, and prestige-biased learning. Henrich, Cheng, and colleagues outlined mechanisms and predictions for each pathway, supported by subsequent theoretical and empirical work (e.g., Cheng et al., 2013; Henrich et al., 2015). Versions and applications of the model are now widespread across the social sciences (e.g., Blake, 2022; Jiménez & Mesoudi, 2021; Koppl, 2021; Laustsen & Petersen, 2017; Maner, 2017; McClanahan et al., 2021; Van Vugt & Smith, 2019), including management and business research (e.g., Bothner et al., 2022; Kakkar et al., 2020; Mayoral et al., 2024; Panchal & Gill, 2019).

Much of our cross-cultural work supports the importance of both dominance and prestige in shaping leadership and status hierarchies. Yet our findings also reveal meaningful overlap and recurring patterns, suggesting the need for a revised ontology of dual-pathway theories (see Garfield et al., 2020; Garfield et al., 2019a, 2019b; Hagen & Garfield, 2019, for discussion of "the conundrum of prestige" and calls to "move beyond dual models" of leadership). Recent experimental findings in social psychology align with this view, showing that many real-world leaders blend dominance and prestige-related traits rather than relying on a single route to influence

(Wiezel et al., 2024). Furthermore, perceptions of political leaders as either dominant or prestigious can depend on the political ideology of the perceiver (Jiménez & Mesoudi, 2021).

Instead of treating prestige and dominance as distinct latent factors underlying divergent leadership strategies, the MCL theory incorporates additional components that may better capture leadership behavior across a wider range of social and cultural contexts. Prestige grounded in social support, for instance, may be qualitatively different from prestige earned through expert knowledge. Likewise, social dominance rooted in resource control—which can include capacities for generosity and culturally valued subsistence skills, often labeled as features of prestige-based leadership—differs from dominance based on fear of violent megalomania. Warriorship and military expertise often align with dominance-style traits such as physical strength, aggression, and intimidation; yet, when success in warfare is dependent on specific knowledge and is culturally revered, the boundary between dominance and prestige blurs. Shamans in many societies similarly draw influence from both fear and threat of aggression and from freely granted respect for their prosocial services and unique expertise, blending dominance and prestige. The dominance–prestige framework, and the contributions of Henrich, Cheng, and others, has transformed the integration of evolutionary theory and ethnography in the study of social status and leadership. The MCL framework builds on this foundation, aiming to further advance interdisciplinary and evolutionary leadership theory.

The MCL framework addresses what Antonakis et al. (2017) term "disjunctivitis," or the proliferation of fragmented, overlapping "mini-theories" lacking a unifying paradigm. By integrating diverse theoretical perspectives and grounding them in comparative data that capture the breadth of human social and cultural variation, this framework offers a coherent foundation for leadership research. It also re-centers attention on the social and group contexts in which leadership is embedded (e.g., Johns, 2024).

Figure 5 presents a Directed Acyclic Graph (DAG) illustrating hypothesized causal pathways from four forms of capital—material, social, neural, and somatic—to leadership emergence. Social context operates as a moderator, shaping the value of each form of capital within a given domain and determining what we term *Effective Capital*: the subset of an individual's capital profile most relevant in that setting. Effective capital then mediates the relationship between an individual's overall capital and their capacity to produce benefits or impose costs—two core mechanisms through which leadership emerges. In this way, context shapes both the relevance of each capital type and the causal pathways linking capital to leadership, consistent with a biological markets perspective. Unlike dual-pathway models that treat influence routes as discrete and bounded, the MCL framework integrates all four capital types into a single multi-pathway structure, offering a more nuanced account of how leadership and followership operate across human cultural diversity and varied problem-solving contexts.

As a unifying framework, the MCL theory can accommodate multiple existing leadership theories—including dominance vs. prestige, transformational vs. transactional, charismatic leadership, leader–member exchange, situational and contingency models, and implicit leadership theories (Antonakis & Day, 2018)—within one struc-

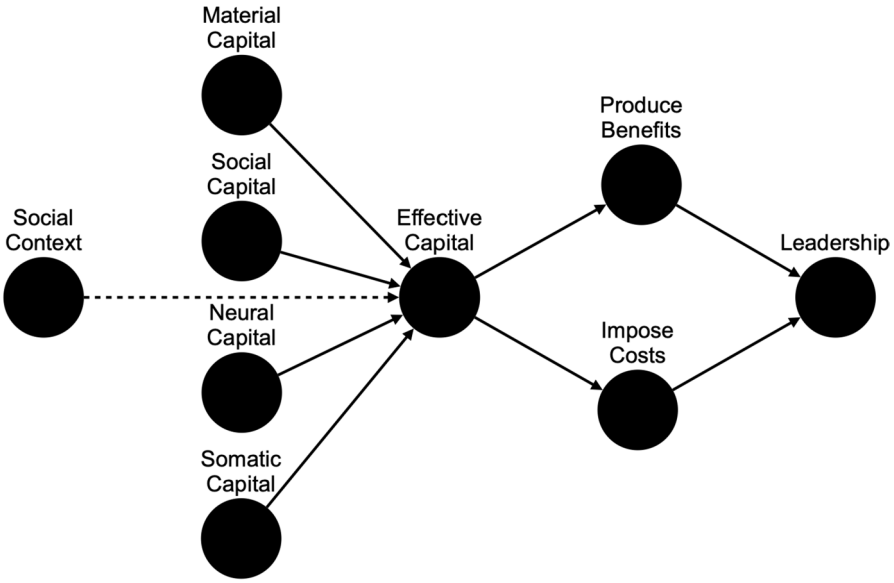


Fig. 5 Directed Acyclic Graph illustrating the conceptual causal relationships in the MCL framework. Four forms of capital—material, social, neural, and somatic—influence leadership emergence through their effects on benefit generation and cost imposition. Social context (dashed line) moderates the relationship between each form of capital and effective capital, determining which capital is most relevant in a given setting

ture. In doing so, it addresses what Antonakis et al., (2017, 2024) term "theorrhea"—the proliferation of narrowly focused leadership theories—by embedding diverse capital-based mechanisms within a single integrative model grounded in biological market theory. This integration foregrounds the ecological and contextual sensitivity necessary to explain leadership and followership across human cultural diversity, rather than sacrificing explanatory power for theoretical economy. In this sense, our approach aligns with Antonakis et al.'s call for synthesis while also heeding Trigger's (2003) caution from our epigraph that excessive parsimony can limit understanding.

Although Fig. 5 treats the four capital types as analytically distinct inputs, in reality, they are often intertwined. Material capital, for instance, can foster the growth of social capital, just as social capital can facilitate economic gains. We separate them here to highlight the primary mechanisms through which each form of capital shapes leadership emergence and the returns leaders generate. Future theoretical and empirical work could build on this model to capture the dynamic, reciprocal links among capital types and their combined influence on both leader and group outcomes over time.

Practical Implications

The MCL theory can inform leadership development, management practice, and decision-making across a wide range of settings. At its core, it underscores that effective leadership rests on deploying multiple forms of capital in ways that fit the contextual

demands of particular social domains. While some forms of capital may be especially valuable in certain contexts, unusually high levels of one type can often offset limitations in another. A leader with limited social networks, for instance, might invest in specialized training and expertise, whereas one with deep knowledge could focus on building influential relationships. This adaptability supports a more integrated and reflexive approach to leadership development.

Leadership development programs can apply the MCL framework by moving beyond a narrow focus on conventional "soft skills" or technical expertise. This could include training that fosters diverse social networks or develops awareness of how physical presence or personality shapes perceptions of competence. For multinational firms and organizations, management practices can be tailored to the economic, cultural, and contextual diversity of their operating environments, emphasizing the forms of capital most relevant to strengthening leader–follower relationships and improving organizational performance.

In practice, applying the MCL framework to leader selection and evaluation involves assessing candidates not only on credentials or past achievements, but also on the full spectrum of capital they bring to the role: the breadth and strength of their social networks (social capital), their capacity to mobilize resources and manage assets (material capital), their expertise and problem-solving abilities (neural capital), and their ability to command attention and meet physical demands (somatic capital). This broader perspective aligns selection processes with the diverse resources that underpin effective leadership.

Future Directions

The MCL theory opens multiple avenues for empirical testing and theoretical refinement. A key priority is to disentangle the relative contributions of different forms of capital to leadership effectiveness across varied cultural contexts. Of particular interest is how the accuracy of social comparison shifts with context and shapes the relationship between capital endowments and leadership emergence, including the amplification of advantages through Matthew Effects. Longitudinal studies could track how capital investments and returns evolve across stages of leader or group development, clarifying the pathways by which leaders gain, sustain, or lose influence and how those pathways shift with leader ontogeny.

Advancing the MCL framework will require cross-disciplinary collaboration—drawing on anthropology, psychology, organizational behavior, and neuroscience—to develop new tools for assessing capital types and their effects on leadership. Future research should also explore how the value of different forms of capital shifts across contexts. For example, how somatic capital affects influence in face-to-face groups versus large, complex organizations.

Finally, future work could look at leadership during crises, such as pandemics, environmental disasters, or political upheavals, when leaders may need to draw on different forms of capital at once and shift how they use them as conditions change. Studying these scenarios can show, in concrete terms, how capital strategies are reshaped under urgent, group demands.

Conclusion

The Multi-Capital Leadership theory offers a framework to understand how different forms of capital influence who becomes a leader and how effective they are, both across societies and within particular settings. Our review points to regularities in how leaders turn capital into influence: in smaller-scale societies, the link between capital and outcomes is often direct and visible, while in large, industrial organizations it tends to be more complex and indirect such that evaluation of leader effectiveness may often be romanticized (Berry & Fowler, 2021; Jervis, 2013). Overall, leadership seems to function best when the kinds of capital a leader invests in and displays align with the demands of their social context. The usefulness of any single type of capital depends not only on how easily followers can recognize it, but also on how it works in combination with other forms of capital to help leaders meet collective challenges.

The MCL theory goes beyond dual pathways models by unpacking the underlying factors that produce patterns such as dominance and prestige and suggesting multiple, dynamic paths individuals may take to positions of influence. It offers a broader, ethnographically informed framework for explaining how leadership emerges and operates across diverse human groups. This perspective calls for research that is contextually grounded, attentive to cultural and historical legacies, and willing to move past WEIRD-centric assumptions, while also recognizing that "non-WEIRD" is not, in itself, a useful analytic category (see Garfield et al., 2020).

The MCL framework serves both as a synthesis of prior scholarship and as a guide for future research across disciplines. By highlighting how different forms of capital interact and gain or lose value depending on context, it offers a more precise and adaptable framework for understanding the varied and multiple pathways through which individuals gain and sustain social influence. In doing so, it deepens our understanding of leadership and followership across societies and species and lays the groundwork for more general models of social organization in both humans and other animals.

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Declarations

Competing Interests The authors do not declare any competing interests.

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