

Perilous and Unaccountable: The Positive Relationship between Dominance and Moral Hazard Behaviors

Garrett L. Brady ¹

Hemant Kakkar ^{1, 2}

Niro Sivanathan

University of Bocconi

Indian School of Business

London Business School

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Authors' Note:

¹ Equal contribution; Names in alphabetical order

² Correspondence concerning this article should be addressed to Hemant Kakkar, Indian School of Business, Gachibowli, Hyderabad, India 500111. Email: Hemant_kakkar@isb.edu

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Abstract

Moral hazard involves a context where decision-makers engage in behaviors that prioritize self-interest while allowing the associated risk to be primarily borne by others. Such decision-making can lead to catastrophic consequences, as seen in the 2008 global financial crisis after hedge fund managers indiscriminately invested their clients' money in subprime mortgages. This research examines which decision-makers are most likely to engage in moral hazard decision-making and the psychological mechanism driving this behavior. Drawing on the dual model of social influence, we posit that individuals associated with dominance, but not prestige, will engage in greater moral hazard behaviors. We further contend that these behaviors are driven by dominant decision-makers' enhanced focus on end goals (outcomes) rather than the means (process) that they use to pursue such goals. We find support for our hypotheses across 13 studies ($N_{\text{Observations}} = 26,880$; of which eight were pre-registered and six studies are reported in the Supplementary Information (SI)), using both correlational and experimental designs. Additionally, we vary the moral hazard context (e.g., a financial setting, a health and safety issue, etc.) and capture both behavioral intentions and actual behaviors, while also ruling out several alternative explanations. These findings demonstrate that dominant decision-makers engage in moral hazard behaviors because of their tendency to prioritize outcomes over processes.

Keywords: dominance and prestige, moral hazard, goal pursuit, outcome accountability, process accountability

Numerous real-world events highlight the pervasiveness and the repercussions of self-interested decision-making, with consequences disproportionately affecting others. Here, the choices made by a few influential individuals can carry substantial implications for the broader community and society at large. For example, an important debate in the United States has focused on the recent collapse of Silicon Valley Bank. While some have called for the protection for novice depositors, others are wary of the precedent set by the U.S. Treasury for protecting risky lending practices: “It’s creating moral hazard that will seed future trouble by encouraging more risky behavior by bank management and reducing caution among depositors, investors and creditors” (Wall Street Journal Editorial Board, 2023). Additionally, on the topic of post-pandemic recovery in 2021, U.K. lawmakers warned the Bank of England that the latter was focusing too heavily on promoting short-term economic recovery that may benefit some at the expense of the long-term climate crisis that would harm many more: “[The bank is] at risk of creating a moral hazard by purchasing high-carbon bonds and providing finance to companies in high-carbon sectors... actions to promote recovery [should] also reduce the U.K.’s exposure to climate change risk” (Harvey, 2021).

The term “moral hazard” mentioned in the above examples refers to a context in which the risks—that is, the costs associated with a decision—are not primarily borne by the decision-maker but by others not involved in the decision-making process (Arrow, 1963; Hölmstrom, 1979; Ross, 1973). Put another way, moral hazard arises when individuals are insulated from the full consequences of their actions, creating an environment where the incentive to prioritize personal gain may outweigh concerns for the collective well-being. In this paper, we refer to decision-makers who pursue personal gain when the potential cost is burdened by others as engaging in either moral hazard decision-making or moral hazard behaviors. Notably, this type

of self-interested behavior differs from unethical behavior as decision-makers are not violating any rules as such (we elaborate on this aspect more in the next section). Given the profound impact of moral hazard behaviors, it is essential that we identify both the distinct characteristics of decision-makers who may be particularly inclined toward such conduct and the underlying motivations driving their actions. Doing so will help us understand how to mitigate moral hazard in vital decision-making scenarios for better collective outcomes.

Existing research has typically associated moral hazard decision-making with individuals occupying a leadership position or experiencing a psychological sense of power (Pitesa & Thau, 2013). Indeed, it is logical to predict that those who enjoy greater influence or authority will feel empowered to make moral hazard decisions. However, neither absolute differences in a formal position nor the discretion to make decisions tell the whole story, as studies show that not all influential leaders act self-interestedly—especially when their actions risk others’ well-being (Chen et al., 2001; Schmid Mast et al., 2009; Scholl et al., 2022). Often, in fact, leaders construe power as a responsibility to broader stakeholders, rather than just an opportunity to pursue their own goals (Scholl et al., 2022). In light of this discrepancy, the current research goes beyond past investigations of moral hazard to examine what separates decision-makers with the same formal authority from engaging in moral hazard behaviors. We contend that the dual model of social influence, encompassing the distinct hierarchical orientations of dominance and prestige, provides a critical lens to answering this question (Henrich & Gil-White, 2001).

Given the magnitude and dangers associated with moral hazard decision-making, scholars have long explored how institutional rules or structures can be adapted to reduce these behaviors (Eisenhardt, 1989; Harris & Raviv, 1979). In particular, some have identified accountability, defined as the “expectation that one may be called on to justify one’s beliefs,

feelings, and actions to others” (Lerner & Tetlock, 1999, p. 255), as a primary means to mitigate moral hazard decision-making. The rationale is that when decision-makers are held accountable for the reasons behind their decisions, rather than just for the outcomes of the decisions, self-interested behaviors are reduced (Pitesa & Thau, 2013).

Beyond such structural constraints, decision-makers also vary in their individual preferences for different types of accountability systems in accordance with their personalities and underlying goals. Some inherently hold themselves accountable for the outcomes of their decisions only, while others value the processes by which they arrive at a decision (Freund & Hennecke, 2015). Since even the best formal accountability systems may suffer from loopholes—and since many decision-makers are not even subjected to such practices (Tetlock et al., 2013)—decision-makers’ own accountability preferences represent a crucial component in explaining the tendency to engage in moral hazard behaviors. We therefore consider this aspect, as well as its relationship with hierarchical orientation, in our current work.

In doing so, this work advances our understanding of how individuals in positions of power differ in their decision-making behavior in four critical ways. First, the current paper builds on prior attempts to elucidate the processes behind moral hazard decision-making, which have focused mainly on the psychological experience and structural position of power (Pitesa & Thau, 2013). We introduce critical individual differences associated with hierarchical orientation to explain when and why moral hazard behaviors do not occur uniformly across all individuals with similar decision-making authority. Specifically, we predict and find that an individual’s dominance orientation, and not just a state or sense of having structural power, is positively related to moral hazard decision-making. Second, our findings demonstrate that the relationship between dominance and moral hazard decision-making is explained by this preference for

focusing on results (i.e., outcome accountability) over process (i.e., process accountability). In doing so, this research sheds light on factors that may lead to preferences for different types of accountability systems. There has been little research examining individual preferences for accountability; our work contributes to this literature by offering a novel antecedent focused on the means by which influence is obtained in groups. We demonstrate that dominance-oriented individuals prefer outcome over process accountability. Finally, we deviate from the majority of the dominance and prestige literature that has considered self-interested decision-making to protect one's position by examining alternative motivations.

Moral Hazard Decision-Making

Under moral hazard conditions, a decision-maker faces a choice with a potential upside but relatively little risk for them; the majority risk or cost of the choice is instead borne by a related or third party not involved in the decision-making process (Hölmstrom, 1979). For example, consider a scenario where an investor hires an investment manager to oversee their investment portfolio. Despite the directive to make sound investment decisions, fund managers are often incentivized to pursue high-risk investments, given the associated commissions from greater returns (Elton et al., 2011; Kurland, 1996). If the investment succeeds, the investor and fund manager both benefit. If the investment fails, however, the investor bears a disproportionate amount of the cost (i.e., lost investment), as there are no “financial penalties” for the fund manager's decision. Thus, acting within the bounds of their contract, the fund manager has the luxury of prioritizing self-interest while shifting the risks of their decisions onto the investor.

Before investigating further into what moral hazard behaviors are, it is important to clarify what they are *not*, as these behaviors may be compared to related concepts in psychology like social dilemmas and unethical behaviors (Kollock, 1998; Van Lange et al., 2013). Moral

hazard decision-making differs from social dilemmas, defined as a conflict between immediate self-interest and longer-term collective interests, in two fundamental ways (Van Lange et al., 2013). First, within a moral hazard context, decision-makers' outcomes are not dependent on the behavior of others. In contrast, the outcomes in social dilemmas are determined by the decisions of others (e.g., as in the prisoner's dilemma and the tragedy of the commons scenario). Additionally, in moral hazard situations unlike social dilemmas, risk is not universally dispersed between the decision-maker and others.

Moral hazard behaviors are also different from unethical behaviors, which violate widely accepted societal rules or norms, such as lying, cheating, or stealing (Kish-Gephart et al., 2010; Treviño et al., 2006, 2014). The term "moral hazard" is an idiom and therefore is often mistaken for unethical behaviors (Dembe & Boden, 2000; Pauly, 1968; Rowell & Connelly, 2012); however, it has the key distinction of not violating any official rules. While moral hazard behaviors may violate notions of fairness, importantly, the decision-maker has full authority and discretion to act how they see fit and is thus not breaking any rules. For example, unethical behaviors often entail a lack of consent given their norm-violating nature, secrecy, and, if detected, punishment. Conversely, moral hazard behaviors are sometimes executed with the permission of those who might be susceptible to greater risk (as in the abovementioned investment scenario), are not necessarily secretive, and are not subjectable to punishments.

At most, one can broadly classify moral hazard behaviors and unethical behaviors under the same category of self-serving behaviors. However, there are many kinds of self-serving behaviors, including rational self-interest, self-interested unethical behavior, pursuing self-interest by hurting others, behaving self-interestedly to benefit one's group, behaving unethically to hurt outgroups, and so on. These behaviors, though self-serving in nature, are qualitatively

different and associated with distinct psychological processes. Thus, moral hazard behavior may reflect self-interested decision-making but selfish decisions are conceptually different from unethical behavior (see Lu et al., 2017 for similar arguments).

Given the ubiquity of moral hazard and its serious ramifications, empirical work examining the psychological antecedents of this behavior is surprisingly scant. As noted, there is some evidence that feeling powerful—whether in terms of having a psychological sense of power or holding a position of formal authority—increases moral hazard decision-making (Pitesa & Thau, 2013). It has been argued that a sense of power leads to moral hazard behaviors because it leads individuals to be more approach-oriented (Galinsky et al., 2003; Keltner et al., 2003), to channel their attention to pursue goals (Overbeck & Park, 2006), to overestimate the success of these goals (Fast et al., 2012), and to treat others as mere instruments toward their desired ends (Gruenfeld et al., 2008). As a result, those associated with higher power are prone to making self-serving decisions that can even impose negative externalities on others.

At the same time, empirical research reveals that the effect of power is more nuanced, such that the manner in which individuals construe power is contingent on their individual characteristics or contextual factors. For instance, some research indicates that individuals can construe power either as an *opportunity* to make things happen, which leads to a greater sense of freedom and a narrow focus on one's goal, or as a *responsibility* toward others, which produces more deliberate and considerate decision-making (Scholl et al., 2022). Consistent with this distinction are findings that power coupled with a communal orientation leads to more socially responsible behaviors (Chen et al., 2001) and that empathetic leaders demonstrate more interpersonal sensitivity (Schmid Mast et al., 2009). In short, power alone may be insufficient to explain moral hazard decision-making. This theoretical assertion also comports well with the

reality that not all decision-makers with formal power engage in moral hazard behaviors (Chiappori et al., 1998; Dionne & St-Michel, 1991). Therefore, the question remains: why do some decision-makers engage in moral hazard while others with similar decision-making power do not? To answer this question, we draw on the dual framework of social influence that is rooted in two hierarchical orientations—dominance and prestige.

Dominance and Prestige as Two Hierarchical Orientations

The dual model of social influence uses evolutionary and psychological foundations to classify behaviors that help individuals attain or maintain high social rank within groups according to two overarching hierarchical orientations: dominance and prestige (Cheng et al., 2013; Garfield & Hagen, 2020; von Rueden et al., 2011). Individuals who are high in either dominance or prestige enjoy similar high social rank, whether in laboratory groups, professional teams, or larger collectives (Cheng et al., 2013; Halevy et al., 2012; Kakkar & Sivanathan, 2017; McClanahan et al., 2021; Redhead et al., 2019). However, while both hierarchical orientations are aimed at fulfilling the same objective (i.e., obtaining high social rank), they are associated with contrasting motivations, cognitions, and behavioral approaches.

Dominance, whereby others acquiesce and concede deference and influence to the focal actor because of the latter's aggressive and coercive tendencies (Cheng & Tracy, 2014; Maner & Case, 2016), has deep evolutionary roots in numerous species. Dominance-oriented (“dominant” hereafter) individuals try to control the narrative and social space around them by being psychologically intimidating, assertive, decisive, and forceful in their interactions. Specifically, dominance relies on exerting formal authority to induce subordinate compliance (Lee et al., 2021) and informal tactics such as speaking first, speaking more often, and suppressing others' ability to exert influence within groups (Anderson & Kilduff, 2009). These behaviors effectively

help individuals to accrue influence within groups as they enhance competence perceptions (Anderson & Kilduff, 2009) and increase psychological intimidation (Cheng et al., 2013). The combative stance conveyed by dominant behaviors reverberates through the hierarchy and signals to potential challengers that acting against such individuals could result in psychological or sometimes even physical harm. Thus, in the case of dominance, social rank is coerced rather than freely conferred.

In contrast, prestige as a means to social rank has evolved primarily among humans due to the fitness benefits (in the evolutionary sense) associated with cultural learning and information transmission (Henrich & Gil-White, 2001). As social learning became an asset to human societies (e.g., with the development of skilled hunters and craftspeople), individuals who demonstrated valuable skills became sought-after role models from whom others could learn (Cheng & Tracy, 2014; Maner & Case, 2016). Consequently, prestige-oriented (“prestigious” hereafter) individuals have long been granted respect and admiration and held in deference. Hence, a core tenet of prestige is that status is conferred rather than coerced. A prestige orientation is associated with being communal or affable, empowering others, cultivating cooperative norms, having moral credentials, and offering advice to others (Halevy et al., 2019; Kakkar et al., 2020; Lee et al., 2021).

We contend that dominant decision-makers are likely to engage in moral hazard behaviors. This prediction draws upon the theoretical framework of Scholl and colleagues that examines whether power is construed as an opportunity or a responsibility in pursuit of one’s goals (Scholl et al., 2022). That is, as Scholl and colleagues argue, decision-makers who construe their freedom to decide, as an opportunity to take actions that benefit themselves or help them to achieve their goals, while those who construe power as a responsibility also take into account

how their actions may impact others. According to this power construal theoretical framework, individual, situational, and sometimes relational factors can determine when those with decision-making autonomy may make either a selfish or prosocial decision. Our work builds on this key conceptual point. Given dominant individuals' tendency to be agentic, to focus primarily on their goals and successes, and to appropriate resources for themselves, we contend that these individuals are prone to engaging in moral hazard decision-making.

Additionally, a number of empirical findings underscore dominant individuals' tendency to benefit themselves without regard for others. For example, when dominant leaders fear losing their high social rank, they may withhold valuable information from the group and prevent skilled group members from influencing group tasks (Maner & Mead, 2010). Similarly, when protected from discovery, dominance is associated with dishonest behavior (Kim & Guinote, 2021). Moreover, dominant individuals achieve high social rank via coercion, which manifests in a low concern for, and competitive disposition toward, others (Case et al., 2018; Lange et al., 2019). This is likely due to dominance's association with anti-social characteristics marked by hubristic pride, which reduces concern for those lower in the social hierarchy (Cheng et al., 2010), and malicious envy, which facilitates a more aggressive and competitive social comparison process (Lange et al., 2019). Finally, dominant leaders typically focus on maintaining a power or resource gap (Henrich & Gil-White, 2001). Taken together, these data suggest that dominant individuals are less likely to consider the negative externalities of moral hazard decision-making and more likely to engage in such behavior if it benefits themselves.

In contrast it is reasonable to expect a negative relationship between prestige and moral hazard decision-making, given that prestigious individuals tend to be caring and generous. At the same time, however, prestige is also a strategy for actively pursuing higher social rank and

influence. To this end, research shows that it is not always simply a selfless desire for others that drives prestige-oriented individuals, but rather, a desire for social approval as well (Case et al., 2018, 2020). For instance, one study found that prestigious individuals' tendency to execute difficult decisions that can lead to negative impressions of them depends on whether such decisions are made in private or public (Case et al., 2018). In short, prestigious individuals may prioritize social approval over optimal decision-making. Since moral hazard behaviors entail offloading the risk of a negative externality to others, it may potentially lead to negative impression of the decision-maker. This suggests that prestige could be negatively related to moral hazard decision-making.

However, it is important to reiterate that moral hazard behavior does not necessarily harm the third parties as the risk is probabilistic in nature. Prestigious individuals could engage in moral hazard behaviors genuinely believing they can benefit a third party. For example, in the investment decision, while risk exists for the investor, there remains a chance that the investment will be successful and thus benefit both parties. Additionally, prestige is associated with both agency and psychological entitlement, that is, a sense of deservingness or self-importance (Lange et al., 2019). This suggests that prestigious individuals could also engage in moral hazard decision-making. Therefore, given both self- and other-oriented motives, it is not entirely clear the relationship of prestige with moral hazard behaviors. Hence, we do not hypothesize this a priori but examine and report the relationship between prestige and moral hazard behaviors for all of our studies.

It is also worth restating that our work differs from research demonstrating that dominance is associated with rule-breaking behaviors (Kim & Guinote, 2021), both conceptually and phenomenon wise. At most, rule-breaking and moral hazard decision-making can be seen as

self-serving behaviors but such a broad classification blurs our understanding of the nuanced psychological processes associated with different self-serving behaviors. Moreover, it would be inaccurate to suggest that only dominance is associated with self-interested behaviors. As mentioned, prestigious individuals also act self-interestedly when worried about their social approval (Case et al., 2018, 2020). Thus, our work focuses on a distinct phenomenon and investigates a unique psychological process to explain its effect. Furthermore, we test the explanatory process by exploring how dominant individuals approach their goals and their emphasis on end results rather than the means used to achieve them.

Goal Pursuit and Accountability Preferences

Goals are a cognitive representation of a future desired end state that is either approached or avoided (Kruglanski, 1996). In pursuing their goals, individuals decide on the degree to which they will focus on the process (i.e., the relevant means and actions associated with achieving a goal) or on the outcome (i.e., the desired end state or the reason one wants to obtain the goal; Freund & Hennecke, 2015; Shaddy & Fishbach, 2018; Touré-Tillery & Fishbach, 2012). A focus on process is associated with following procedures and mastering best practices in pursuing the goal—that is, the focus of the goal stands in relation to how it is achieved. Conversely, an outcome focus emphasizes the standards by which the goal is set—that is, the metric of success is the result (Zimmerman & Kitsantas, 1997, 1999). This singular focus on outcomes can sometimes lead to suboptimal outcomes (Freund & Hennecke, 2015; Sitkin et al., 2011). For instance, emphasis on outcome over process accountability systems may result in an escalation of commitment (Simonson & Staw, 1992), risk-taking (Lieberman et al., 2001), and unethical behavior (Schweitzer et al., 2004).

As a result of these risks, scholars and policymakers have made a tremendous effort to shift decision-makers' focus away from outcomes toward the process to prevent avoidable negative consequences. Structural accountability offers one way to make decision-makers more answerable for their reckless behaviors (Lerner & Tetlock, 1999). When formal rules and policies articulate and incentivize the importance of process rather than outcomes, individuals focus on the rationale for their actions. Consequently, they hold themselves more accountable for how they approach their goals rather than whether they achieve them (Lerner & Tetlock, 1999). Thus, process accountability focuses on the reasons and procedures behind an outcome, while outcome accountability focuses on the end results of a decision (Lerner & Tetlock, 1999). Importantly, beyond being affected by formal rules, accountability preferences can also stem from individual factors.

Critically, Tetlock's seminal conceptualization of accountability preferences reflects an individual's mental state as opposed to a state of formal rules or environment (Tetlock, 1992). This sense of felt accountability, or an individual's subjective perception of responsibility for their actions, can predispose decision-makers to prioritize either the outcome or process. In other words, certain individual predispositions or psychological factors can promote a preference for outcome accountability over process accountability. In line with this perspective, Tetlock et al. (2013) found that individuals with conservative political ideologies prefer outcome accountability systems over process systems due to diminished trust in others. Likewise, decision-makers who see means as less relevant to their end objectives invest more time, money, and resources in goal pursuits that they perceive as critical to their desired outcome (Shaddy & Fishbach, 2018). However, outside of political ideology, there is little understanding of what predicts an individual's accountability preference and how accountability systems emerge

(Cardinal et al., 2004; Tetlock et al., 2013). Yet, high-ranking individuals often implement accountability structures to set expectations and enforce evaluation procedures. Thus, it is crucial to understand what motivates a leader's preference for outcome or process accountability.

The Mediating Role of Accountability Preference on Moral Hazard Behaviors

As noted, leaders or those with decision-making authority can construe their power as either an opportunity to achieve their goals or as a responsibility for how those goals will be achieved (Scholl et al., 2022). We contend that a dominance orientation will be associated with construing decision-making autonomy as an opportunity, consistent with the extant work highlighting the self-interested nature of dominant individuals (Maner & Case, 2016). Importantly, Scholl and colleagues (2022) work further integrates the literature on goal striving and an individual's regulatory state. An individual's internal or self-guided representation of their desired end situation is described as their regulatory state (Freitas et al., 2002). For instance, regulatory states such as locomotion mode or implementation mindset can make an individual focus more on goal progress or getting things done than on their surroundings or other alternative goals (Gollwitzer et al., 1990; Kruglanski et al., 2000; Scholl et al., 2021). In contrast, individuals associated with the regulatory state of assessment mode are more deliberative when pursuing their goals (Gollwitzer et al., 1990). They pay attention to various consequences that their actions may cause and try to "do things the right way" (Scholl et al., 2022, p. 90). The psychology underlying locomotion and assessment regulatory states is consistent with one's preference towards outcome or process accountability respectively.

A preference for outcome accountability is related to a strict emphasis on achieving one's desired objective. A focus on outcome indicates one's tendency to seek success, prioritizing end objectives coupled with an inclination toward self-interest and an inflated sense of self-worth

(Braun, 2017; Foster & Trimm IV, 2008). Dominant leaders share similar characteristics associated with inflated self-worth like self-aggrandizing, narcissism, and hubristic pride (Cheng et al., 2010; Witkower et al., 2022). Furthermore, instead of being intrinsically motivated, dominant individuals are more concerned with whether or not they've obtained an external reward (Damian & Robins, 2013; Tracy & Robins, 2007). In short, dominant leaders emphasize goals that focus on task completion, are concerned with their own achievements and are motivated by external rewards. These findings are similar to the theoretical framework examining the consequences of construing power as opportunity. The empirical findings there links such construal of power with locomotion regulatory state that is concerned with getting things done and achieving the desired goal (Sassenberg et al., 2012; Scholl et al., 2018, 2021). Hence, we contend that decision-makers associated with dominance who are narrowly focused on their own goals or are more opportunistic in nature, will favor outcome over process accountability, leading to greater moral hazard decision-making.

In contrast, prestigious individuals are more likely to possess genuine self-esteem rather than an inflated sense of self and to experience authentic pride (Cheng et al., 2010). These types of leaders take a more tempered approach by ensuring their objectives do not disturb group harmony. They are more deliberative in nature and often consider means that may benefit all. For instance, prestigious leaders tend to balance group and individual motivations when making decisions by, for example, engaging in a more participatory form of leadership (Lee et al., 2021). It is important to note that prestigious leaders may forgo best practices when their social approval is threatened (Case et al., 2018). Notwithstanding these occasional scenarios, however, prestigious leaders' other-directed focus should lead them to prefer process over outcome accountability or at most, to prefer the two equally.

Finally, in light of findings on the role of outcome accountability systems in predicting self-serving or moral hazard decision-making (Pitesa & Thau, 2013), we contend that a preference for outcome accountability will mediate the direct effect of dominance on moral hazard decision-making. In proposing the mediating role of accountability preference, our work examines the understudied effects of individual accountability preferences on decision-making (Hall et al., 2017). In sum, we propose that dominant decision-makers' proclivity toward moral hazard behaviors will be explained by their preference toward outcome rather than process accountability systems.

Overview of Studies

Across 13 studies ($N_{\text{Observations}} = 26,880$; of which eight were pre-registered and six studies are reported in the SI), we examined the relationship between an individual's hierarchal orientation and their propensity to engage in moral hazard behaviors. In all of our studies, participants were given full authority to decide, either by their formal position or through independence from others. Study 1a utilized a sample of working professionals from the financial investment industry and found that self-reported dominance had a positive relationship with moral hazard behaviors. Employing a time-lagged study design among a sample of MBA students, Study 1b demonstrated that dominance orientation predicted a greater preference for outcome accountability. Study 2a expanded the implications of moral hazard decision-making by testing our full model with various moral hazard scenarios, from harming the climate to exposing others to diverse types of risks in the pursuit of self-gain. Study 2b replicated the effects from Study 2a, testing the entire model with an experimental design.

In Study 3, participants were randomly assigned to either a dominance, prestige, or control condition to provide causal evidence for dominance as the primary predictor of moral

hazard behaviors. In addition, we accounted for the alternative explanation that a dominance orientation is related to greater risk-taking in general. Study 4 manipulated hierarchical orientation and accountability preferences in a between-subjects design to further demonstrate the role of outcome accountability as an underlying mechanism via the process of moderation. Lastly, in Study 5, we objectively measured moral hazard behavior and ruled out the alternative explanations of pure self-interest and risk-taking. Taken together, the results of these studies highlight the importance of a leader's hierarchical orientation as a consequential antecedent in predicting moral hazard behaviors and the importance of preferring outcome accountability as an explanatory factor.

The pre-registration protocols explain our sample size justification for the eight pre-registered studies. For the other six studies, the sample size was determined based on the study design or the availability of participants. The Supplementary Materials (SM) includes verbatim materials for all our studies. Please note that tables and figures preceded by capital S, such as Table S1, etc., are reported in the SI. All studies conditions, measures, and data exclusions are reported. The data and SM are available on the Open Science Framework at the following link: <https://osf.io/75fcn/> (Brady et al., 2023). Finally, our statistical analysis accounted for the variation in the dependent variable by including stimuli as a random factor where applicable. Table S1 in the SI provides an overview of the 13 studies with information on study design, main objective, and sensitivity analyses.

Study 1a

The goal of this study was to examine whether dominance positively predicts moral hazard behavior among a sample of working professionals from the financial investment industry by presenting them with a moral hazard situation typical of their everyday work experience.

Method

Sample and procedure. We recruited 210 U.S. financial professionals through ROI Rocket, a U.S.-based market research company (44% female; $M_{age} = 42.08$ y, $SD_{age} = 11.73$). Each participant was paid \$25 for their participation in a five minute study. We surveyed 210 professionals to achieve a final sample size of 200 after potential drops. The decision to recruit about 210 participants was driven by both the availability of finance professionals on this platform and our research budget. A sensitivity analysis revealed that this sample size, with the repeated measure design, would have detected a minimum effect size of $r = 0.09$ with 80% power.

Participants first completed the dominance and prestige questionnaire before being informed that this was the second part of a two-part study. Participants were then informed that they would be taking the role of an investor. As an investor, they had absolute authority and autonomy to make investment decisions, and these decisions would be based on options provided by other participants from the first part of the study. Specifically, the Study 1a participants were told that people from the first part of the study, referred to as “clients,” had been presented with different investment options and selected their top two. Investors were instructed to make investment decisions that might benefit their clients.

Participants were informed that they would make five investment decisions. The scenarios consisted of two investment options where one option had a guaranteed chance to earn their client a set amount and the investor (i.e., the participant) would earn a guaranteed commission of 15%. The other option was non-guaranteed, with a 50% chance of success, where the client’s money would be doubled, and a 50% chance of failure, where the client’s money

would be lost. If successful, the participant stood to earn a 25% commission from this option. There was no penalty or commission in case the investment failed.

To capture moral hazard behavior, we ensured that the non-guaranteed option had a lower expected value on the investment return than the guaranteed option for the client and the investor always had a larger expected value in the non-guaranteed option than the guaranteed option. For example, one investment scenario included a guaranteed option that would earn the client \$3,000 and earn the participant a \$450 bonus. The non-guaranteed option had a 50% chance of earning the client \$4,500 and the participant a bonus of \$1,130. In this case, by choosing the non-guaranteed option, the participant made a self-interested decision wherein the client bore the risk of their decision with a lower expected value—a 25% reduction (\$3,000 vs. \$2,250)—and the investor’s expected values increased by 25% (\$450 vs. \$565). Notably, the scenario resembled real-life decisions where fund managers invest their clients’ money and share the upside (via commissions) while not bearing the direct risk for the associated downside (losses of a failed investment). It is worth noting that the current dependent variable does entail a degree of risk-taking, as selecting the investment with a 50% success rate would earn a higher expected value. We account for this alternative explanation in Studies 3 and 5.

Measures

Dominance and prestige. Participants rated their dominance and prestige tendencies using the validated 17-item dominance-prestige scale (Cheng et al., 2010). Prestige items included “Members of my peer group respect and admire me” and “Others seek my advice on a variety of matters.” Dominance items included “I enjoy having control over others” and “Some people are afraid of me” (1 = *not at all* to 7 = *very much*; $a_{prestige} = .87$ and $a_{dominance} = .86$).

Investment decisions. We used five binary decisions where the participant selected either the guaranteed investment or the investment that qualified as a moral hazard.

Results

Moral hazard. Since participants responded to five different moral hazard investment scenarios, we ran our analysis in two different ways. First, we counted how many times (out of five) participants chose the moral hazard option. Since this was a count variable, we ran a Poisson regression. The resulting analysis while controlling for gender and age revealed a significant effect of dominance on moral hazard ($b = .13, SE = .04, p = .001$); there was no significant relationship with prestige ($b = .07, SE = .04, p = .10$). These results remained consistent even without the control variables. Second, since each participant attempted multiple investment scenarios, we ran a more conservative multilevel logit regression by converting the data to the long format and examined participants' investment choices with 1 coded as moral hazard and 0 as the guaranteed option ($N_{observations} = 1,050$). We also included a fixed effect of each moral hazard investment scenario and controlled for participants' gender and age. Results reported refer to analyses with control variables included. In support of our hypothesis, both with and without controls, we found that dominance positively predicted moral hazard behavior ($b = .41, S.E. = .14, p = .004$, Table 1, Model 3). There was no significant relationship with prestige ($b = .23, SE = .16, p = .16$, Table 1, Model 3).

Discussion

Among a sample of finance professionals making investments decisions, we found that dominance-oriented individuals displayed a greater willingness to engage in moral hazard behavior by putting their client's capital at risk to maximize their commissions. We found no significant relationship in Study 1a between prestige and moral hazard behavior. Furthermore, in

Study S1 in the SI, we replicated this effect in a European behavioral lab using a time-lagged study design to reduce concerns of common method bias.

Table 1
Study 1a Regression Results Using Random Coefficient Modeling for Each Moral Hazard Decision

	Moral Hazard		
	Model 1	Model 2	Model 3
Constant	.98 (.90)	-3.18*** (.96)	-2.12 (1.35)
Controls			
Gender ^a	-.22 (.38)		.16 (.39)
Age	-.05 (.02)		-.034* (.017)
Income	-.004 (.13)		-.08 (.13)
Scenario Fixed Effects	Yes	Yes	Yes
Independent Variables			
Dominance		.44*** (.13)	.41** (.14)
Prestige		.19 (.16)	.23 (.16)

N = 1050; *p < .05, ** p < .01, *** p < .001. Standard errors are shown in parentheses; a: 1 = male, 2 = female.

Study 1b

Having found the connection between dominance and moral hazard behavior, we next sought to examine whether dominance positively predicts an individual's tendency to prioritize outcome over process accountability.

Method

Sample and procedure. MBA students attending a European graduate business school completed this study as part of an incoming survey across two time intervals separated by a four-week difference. These students were nested within different class sections and in each section students were part of four- to five-member teams. We sent the survey to approximately all 480 students enrolled in the program. At Time 1 and Time 2, 399 and 443 participants completed the

survey, respectively. Matched responses from Time 1 and Time 2 led to a total sample size of 369 students (39% female; $M_{age} = 28.94$, $SD_{age} = 2.49$). A sensitivity analysis revealed that this sample size would have detected a minimum effect size of $r = 0.15$ with 80% power.

At Time 1, participants indicated their hierarchical orientation by completing the dominance-prestige scale and their demographic details. At Time 2, participants reported their accountability preference. To accurately assess accountability preference, we asked participants to imagine themselves as the CEO of a large company who was choosing between the two types of accountability systems: process accountability and outcome accountability. In line with the relevant literature, we described a process accountability system as one wherein employees were evaluated on the processes, procedures, or means they used to obtain bottom-line results (e.g., adopting best practices), but not solely on whether they achieved the results (Tetlock et al., 2013). Likewise, outcome accountability was described as a system wherein employees were evaluated on their ability to obtain results (e.g., profits in business and other bottom-line indicators in other pursuits), but not on the processes, procedures, or means they used to obtain those results (Tetlock et al., 2013). Participants then reported their accountability preferences.

Measures

Dominance and prestige. Participants rated the extent to which they would prefer to be a dominance- or prestige-oriented leader using the same 17-item scale as in Study 1a (Cheng et al., 2010; $a_{prestige} = .82$ and $a_{dominance} = .89$).

Accountability. Participants rated their accountability preference using a three-item scale adapted from the previous research (Tetlock et al., 2013). The items were “Please indicate your preference for the outcome accountability option” (1 = *preference for no outcome accountability* to 9 = *preference for intense outcome accountability*); “Please indicate your preference for the

process accountability option” (1 = *preference for no process accountability* to 9 = *preference for intense process accountability*); and “Please indicate your preference between the two types of accountability” (1 = *pure process accountability* to 9 = *pure outcome accountability*). These three items were combined by reverse-coding the preference for process accountability, such that higher values on this construct represented a preference for outcome accountability ($\alpha = .83$).

Results

Accountability. Since students were nested within teams and belonged to different class sections, we performed multilevel regression analysis using a restricted maximum likelihood approach with the team as the higher-order factor to account for any team-level variance. At the same time, we controlled for participants’ gender and age and included a fixed effect of each class section in our analysis. The resulting analysis revealed a significant positive effect of dominance on outcome accountability ($b = .17$, $SE = .07$, $p = .024$; Table 2, Model 4). Prestige was unrelated to accountability preference ($b = -.06$, $SE = .12$, $p = .63$; Table 2, Model 4).

Table 2
Study 1b Regression Results Using Random Coefficient Modeling

	OUTCOME ACCOUNTABILITY			
	Model 1	Model 2	Model 3	Model 4
Constant	-.57 (.74)	-.49 (.90)	.51 (1.21)	-.08 (1.24)
Controls				
Gender ^a	-.17 (.15)	-.14 (.16)	-.18 (.16)	-.14 (.16)
Age	.02 (.03)	.004 (.03)	.002 (.03)	.002 (.03)
Class Section Fixed Effects	Yes	Yes	Yes	Yes
Independent Variables				
Dominance		.17* (.07)		.17* (.08)
Prestige			-.09 (.12)	-.06 (.12)
<i>N</i>	439	369	369	369
AIC	1,618.30	1,349.10	1,353.00	1,353.20
BIC	1,659.10	1,392.10	1,396.00	1,400.20
Log Likelihood	-799.10	-663.50	-665.50	-664.60

* $p < .05$, ** $p < .01$, *** $p < .001$. Standard errors are shown in parentheses; a: 1 = male, 2 = female.

Discussion

Study 1b used a sample of graduate students who were months away from stepping into leadership positions to demonstrate that dominance is associated with a greater preference for outcome over process accountability. We found no relation between prestige and outcome accountability. Additionally, measuring our variables of interest at two different time intervals reduced common method bias and demand effect concerns. Having demonstrated evidence for our predicted effects separately, we tested our complete model in the next set of two studies.

Study 2a

Study 2a was designed to achieve two objectives: first, to test the complete model by examining the role of accountability preferences in explaining the positive relationship between dominance and moral hazard behavior; second, to offer greater generalizability on our dependent variable beyond the investment paradigm used in Study 1a. To accomplish these aims, we included a variety of moral hazard scenarios based on environmental, health and safety, and economic issues. By examining our hypotheses across multiple moral hazard contexts, this dependent variable sampling approach allowed us to go beyond a single measure or paradigm and, in turn, offered greater confidence in the robustness and generalizability of our effects.

Method

Sample and procedure. We pre-registered the sample size, exclusion criteria, hypotheses, and analyses in advance of data collection (<https://aspredicted.org/8jj26.pdf>). As per the pre-registration, we aimed to recruit a minimum sample of 289 as that would have given us an effect size of $f = 0.07$ with 80% power. To account for potential exclusions, we preregistered and recruited 300 U.S. participants via Amazon Mechanical Turk (MTurk). A total of 303 participants completed the study, of which one participant was excluded for having a duplicate

IP address and 12 for having non-U.S. IP addresses, leaving 290 participants (38% female; $M_{age} = 36.86$ y, $SD_{age} = 10.98$).¹

Participants first reported their hierarchical orientation by responding to the dominance-prestige scale. To avoid any order effects, we randomized the accountability preference and moral hazard scenarios. To allow us to capture accountability preferences, participants reported their preference for outcome or process accountability. To capture moral hazard decision-making, we sampled our dependent variable across 12 different moral hazard scenarios. Participants randomly responded to any six scenarios. In all scenarios, participants were assured of their complete authority in making their decisions.² For example, one scenario read:

You are the Chief Financial Officer of a regional chain of fast-food restaurants. The economy is on a downturn and the restaurant industry is expecting a decline of almost 65% in sales. Fortunately, your restaurants have continued to perform relatively well, having maintained 90% of your projected sales. In response to the economic decline, the government has offered a stimulus package to aid the struggling businesses. However, there is not enough money for every business to receive the assistance. Because many of your restaurants operate with fewer than ten employees, you qualify for government assistance. If you accept the money, your CEO will likely award you with a substantial bonus, but this will take needed funds from struggling restaurants where unemployment is predicted to increase. Because the chain is privately owned, the public does not have access to the company's sales record. Additionally, you will not face any legal consequences as your company qualifies for the government assistance. How likely are you to accept the government assistance?

After each scenario, participants indicated their likelihood of engaging in the behavior.

Measures

Dominance and prestige. We used the same 17-item scale from Studies 1a and 1b to measure dominance and prestige ($a_{prestige} = .90$ and $a_{dominance} = .97$).

¹ For this and all other studies reported in the manuscript and SI, the results remain significant and directionally consistent if we include excluded participants.

² All 12 scenarios can be found in the supplementary materials.

Accountability. As per our pre-registration, we used the same three items from Study 1b to measure accountability preference. However, the reliability coefficient indicated poor internal consistency ($\alpha = .49$). Hence, we report our results using the composite measure and the single trade-off item capturing participants' preference between pure process or pure outcome accountability. We found similar results using both versions of accountability preference.

Moral hazard. Participants reported their likelihood of engaging in moral hazard behavior on a scale from 0 to 100% following each scenario.

Results

Moral hazard. Since each participant responded to six different moral hazard scenarios, we first converted our data to the long format so that we could account for the variance associated with the nested design; this resulted in a total of 1,740 observations. We then ran a mixed-effect multilevel regression analysis at the participant level. Also, we included a fixed effect of each moral hazard scenario, and the order effect based on whether participants responded to the moral hazard scenarios or the accountability preference questions first. Additionally, we report analysis with and without controlling for participants' gender and age. Results reported refer to analyses with control variables included. In support of our hypothesis, dominance positively predicted moral hazard behavior ($b = 7.36$, $SE = .54$, $p < .001$, Table 3, Model 4). There was no relationship with prestige ($b = .20$, $SE = 1.07$, $p = .85$, Table 3, Model 4).

Table 3
Study 2a Regression Results Using Random Coefficient Modeling

	Moral Hazard					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	19.33** (7.23)	9.64 (7.43)	16.12* (7.00)	22.64** (8.03)	14.06 (8.09)	19.88* (7.76)
Controls						
Gender ^a				-2.96 (2.05)	-2.77 (1.99)	-3.05 (1.97)
Age				-.04 (.09)	-.08 (.09)	-.05 (.09)
Scenario Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Order Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Independent Variables						
Dominance	7.58*** (.52)	6.72*** (.55)	6.00*** (.60)	7.36*** (.54)	6.46*** (.57)	5.76*** (.61)
Prestige	.21 (1.07)	-.20 (1.04)	-.63 (1.04)	.20 (1.07)	-.20 (1.04)	-.64 (1.04)
Mediator						
Composite Outcome Accountability		2.94*** (.71)			2.99*** (.714)	
Single-Item Outcome Accountability			2.42*** (.49)			2.44*** (.49)
AIC	16,331.10	16,315.30	16,309.10	16,332.40	16,316.20	16,310.10
BIC	16,423.90	16,413.60	16,407.40	16,436.20	16,425.50	16,419.40
Log Likelihood	-8148.50	-8139.60	-8136.60	-8147.20	-8138.10	-8135.10

N = 1740; * $p < .05$, ** $p < .01$, *** $p < .001$. Standard errors are shown in parentheses; a: 1 = male, 2 = female.

Accountability. Since participants rated their accountability preference once, we ran an ordinary least squares regression to examine if dominance positively predicted a preference for outcome accountability. In support of our hypothesis, dominance was positively associated with the composite measure of outcome accountability ($b = .30$, $SE = .04$, $p < .001$) and the single item capturing trade-off in preferences between outcome and process accountability ($b = .66$, $SE = .06$, $p < .001$). Prestige was unrelated to the composite measure of outcome accountability ($b = .13$, $SE = .09$, $p = .12$) but, unexpectedly, positively related with the single-item measure ($b = .34$, $SE = .12$, $p = .006$). The difference between dominance and prestige beta coefficients was significant, suggesting that dominance was a stronger predictor of outcome accountability than prestige, $F(2, 285) = 55.63$, $p < .001$. Overall, our hypotheses were supported.

Indirect effect. Consistent with our hypotheses, we pre-registered two indirect effect tests: (1) a significant positive indirect effect of dominance via preference for outcome accountability on moral hazard behavior, and (2) a significant positive difference in the indirect effect of dominance (vs. prestige) in predicting moral hazard behavior via preference for outcome accountability. We ran a bootstrapped generalized structural equation model (GSEM) with 5,000 resamples. Supporting our hypothesis, the indirect effect of dominance via the composite measure of outcome accountability on moral hazard was positively significant ($b_{indirect_dominance} = .86$, $CI_{95\%} [.56, 1.17]$). We also observed a significant indirect effect of prestige on moral hazard ($b_{indirect_prestige} = .41$, $CI_{95\%} [.22, .61]$). However, more importantly, the difference in indirect effect between dominance and prestige was also significant ($b_{indirect_diff} = .45$, $CI_{95\%} [.26, .70]$). We performed the same analysis using the single-item measure of outcome accountability preference and the results were consistent and significant ($b_{indirect_dominance} = 1.58$, $CI_{95\%} [1.14, 2.05]$; $b_{indirect_difference} = .74$, $CI_{95\%} [.50, 1.06]$).

Discussion

In addition to replicating the findings from Studies 1a and 1b, Study 2a supported outcome accountability as the mediating mechanism explaining the positive relationship between dominance and moral hazard decision-making. Moreover, by employing different instantiations of moral hazard behaviors, Study 2a offered greater confidence and generalizability for our theoretical assertions, moving beyond the investment paradigm used in Study 1a. Specifically, we document a variety of moral hazard contexts, including financial, environmental, public investment, and public health and safety scenarios. We also observed a significant indirect effect of prestige on moral hazard behavior via outcome accountability. However, this effect lacks robustness as we do not replicate this in other studies. Notwithstanding this indirect effect, we

found that the difference in the indirect effect of dominance versus that of prestige was positive and significant, consistent with our pre-registered analyses.

Furthermore, to replicate and demonstrate the robust and unique positive relationship between dominance and moral hazard behavior, we report two additional pre-registered studies in the SI (Study S2 ($N_{\text{observations}} = 2,460$) and Study S3 ($N_{\text{observations}} = 2,376$)) where we account for possible alternative explanations for our effects—namely, personality (Big 5 inventory), empathy, narcissism, machiavellianism, self-concern, and sense of power. Across both studies, dominance was incrementally predictive of moral hazard behavior over and above these alternative factors associated with self-interested decision-making.

Study 2b

To strengthen the empirical evidence for our proposed model, we manipulated dominance and prestige in Study 2b to offer causal evidence in support of the model.

Method

Sample and procedure. We pre-registered the sample size, exclusion criteria, hypotheses, and analyses before the data collection (<https://aspredicted.org/um4j2.pdf>). Power analysis using G*Power for ANOVA with repeated measures suggested a minimum sample size of 330 for 80% power. To account for participants who might be dropped from the analysis, we preregistered and recruited 400 U.S. participants via Prolific Academic. A total of 398 participants completed the study, of which three were excluded for having either a duplicate IP address or non-U.S. IP addresses, leaving 395 participants (49% female; $M_{\text{age}} = 35.08$, $SD_{\text{age}} = 13.60$).

This study utilized a two-condition between-subjects design (Hierarchical Orientation: Dominance [$N = 197$] vs. Prestige [$N = 198$]). Participants were told they would be presented with

various decisions where they would have the authority to behave as they saw fit. Next, they received a brief description of dominance and prestige as the two leadership styles. They were informed that as leaders in this study, they were expected to take the role of a leader who is either dominant or prestigious. Using an existing paradigm, we manipulated dominance and prestige by informing participants how they were expected to behave and interact with others as a senior leader (Case et al., 2018). Specifically, participants read the following (with the words in brackets denoting first the dominance manipulation and then the prestige manipulation):

Imagine that you are a senior leader in a leading business organization. As a senior leader, you hold a lot of influence in the organization. Within this company you are [expected to demonstrate authority and control over / highly respected and admired by] your subordinates. In your role, you are expected to demonstrate behaviors that [exert control over every facet of your team / will lead your team to respect you and hold you in high esteem]. For example [by ensuring that you are assertive in your opinion and dealings with other team members / by sharing your knowledge, expertise and skills with others in your team]. You are also willing to [use threat and intimidation / offer advice and guidance] in order to demonstrate [your dominance / your supportiveness]. You are first and foremost responsible for [evaluating your subordinates performance, be authoritative and are able to reward and punish them as you see fit / demonstrating expertise and being a role model for your subordinates].

Participants were then presented with the process and outcome accountability descriptions and asked to indicate their accountability preferences. Finally, as in Study 2a, participants were randomly presented with six of the 12 moral hazard scenarios.

Measures

Manipulation check: dominance and prestige. We used the same 17-item scale from the previous studies to measure dominance and prestige ($a_{prestige} = .95$ and $a_{dominance} = .98$).

Accountability. We used the same three items in Studies 1b and 2a to measure accountability preference ($a = .82$).

Moral hazard. Participants reported their likelihood of engaging in moral hazard behavior on a scale from 0 to 100% following each scenario.

Results

Manipulation check. Supporting the efficacy of our manipulation, participants in the dominance condition rated themselves higher on dominance ($M = 5.43$, $SD = 1.64$) than those in the prestige condition ($M = 2.26$, $SD = 1.30$), $F(1, 394) = 456.73$, $p < .001$, $d = 2.15$. Participants in the prestige condition rated themselves higher on prestige ($M = 6.26$, $SD = .65$) than those in the dominance condition ($M = 4.68$, $SD = 1.51$), $F(1, 394) = 184.53$, $p < .001$, $d = 1.37$.

Accountability. Similar analysis showed that participants in the dominance condition indicated a greater preference for outcome accountability ($M = 5.60$, $SD = 1.81$) than participants in the prestige condition ($M = 5.18$, $SD = 1.69$), $F(1, 394) = 5.80$, $p = .016$, $d = .23$.

Moral hazard. Since each participant responded to six different moral hazard scenarios, we first converted our data to the long format to account for the variance associated with the nested design; this resulted in a total of 2,370 observations. We ran a mixed-effect multilevel regression analysis at the participant level and included a fixed effect of each moral hazard scenario. In support of our hypothesis, we found a marginally significant conditional effect in predicting moral hazard behavior, such that participants in the dominance condition indicated a greater likelihood of engaging in moral hazard behaviors ($b = 2.99$, $SE = 1.76$, $p = .084$).

Indirect effect. To test for the indirect effect, we ran a bootstrapped GSEM with 5,000 resamples. In support of our predicted indirect effect, we found that dominance increased the likelihood of engaging in moral hazard behavior via a greater preference for outcome accountability ($b = .48$, $SE = .18$, $CI_{95\%} [.178, .956]$).

Discussion

Study 2b offered directional support for our findings by providing experimental evidence that dominance was positively related to moral hazard decision-making. Furthermore, we have

included two pre-registered studies in the SI (Study S4 and S5) that experimentally manipulated dominance and prestige to offer further causal evidence on the effects of moral hazard behavior and accountability preference individually. In both studies, we found that participants in the dominance (vs. prestige) condition engaged in more moral hazard behaviors and preferred outcome over process accountability. Additionally, Study S6 in the SI manipulated both hierarchical orientation (dominance and prestige) and authority to make the decision (yes vs. no) in a 2 x 2 between-subjects design to demonstrate that authority alone is not sufficient to predict moral hazard behavior. Rather, authority in combination with dominance appears to lead to increased moral hazard decision-making. Despite these results, it is possible that dominance is not predictive of moral hazard behavior specifically but of risk-taking more broadly. We conducted Study 3 to address this concern.

Study 3

Study 3 extends our findings by examining whether dominance explains moral hazard decision-making beyond a general tendency to make risky decisions. In addition, this study included a control condition to directionally test our prediction that dominance leads to moral hazard behavior. Doing so allowed us to test whether the differences observed between dominance and prestige are driven by dominance's positive association with moral hazard behaviors or simply due to reluctance on the part of prestigious individuals.

Method

Sample and procedure. We pre-registered the sample size, exclusion criteria, hypotheses, and analyses in advance of the data collection (<https://aspredicted.org/6rr74.pdf>). Pre-registered power analysis indicated a minimum sample size of 1921 for 80% power with an effect size of $f = 0.07$. Similar to previous studies, we preregistered and recruited 2,220 U.S.

participants via MTurk to account for potential exclusions. A total of 2,235 participants completed the study. In line with our pre-registered criteria, we excluded 367 participants for failing an attention check question, 33 participants for having either a duplicate or non-U.S. IP address, and 17 participants for providing nonsensical responses (i.e., larger than the study design allowed for). The final sample consisted of 1,818 participants (48% female; $M_{age} = 40.14$, $SD_{age} = 13.05$).

This study utilized a 3 (Hierarchical Orientation: Dominance [$N = 596$] vs. Prestige [$N = 599$] vs. Control [$N = 623$]) x 2 (Decision Task: Risk-Taking [$N = 915$] vs. Moral Hazard [$N = 903$]) between-subjects study design. All participants were asked to imagine that they were a managing director at a hedge fund and then randomly assigned to one of the dominance, prestige, or control conditions. We used the same dominance and prestige manipulation as in Study 2b. Participants received no additional information in the control condition and directly responded to the manipulation check items. After completing the manipulation checks, participants responded to a situation based on risk-taking or moral hazard (Pitesa & Thau, 2013).

For the moral hazard condition, participants were instructed to imagine that they worked for a large financial services company as a fund manager and were given full authority and autonomy in making their client's financial decisions. The paradigm presented participants with an opportunity to invest their client's money. However, there was little information about the investment opportunity besides the expected returns. Specifically, participants could invest up to \$1 million of the client's money. The investment had a 50% chance of doubling the client's investment and a 50% chance that the client could lose the invested money. As the investment manager, participants stood to make a 20% commission if the investment was successful and would not face any monetary penalty if the investment was unsuccessful. In the risk-taking

condition, while participants still had a chance to earn a 20% commission if the investment succeeded, they also suffered a 20% penalty if the investment failed. Thus, investing more of the client's money in the latter scenario captured participants' propensity for risk-taking alone. Participants then indicated the amount they would like to invest.

Measures

Manipulation check. We used the same 17-item dominance-prestige scale as in the previous studies ($a_{prestige} = .91$ and $a_{dominance} = .97$).

Amount invested. The amount of the client's money invested by the participant (\$0–\$1,000,000) indicated the degree of either moral hazard or risk-taking behavior based on the conditions. The reported amount is divided by 1,000 and interpretable in thousands of dollars.

Results

Manipulation check. We performed a 3 x 2 analysis of variance (ANOVA) on participants' dominance and prestige ratings, respectively. The resulting analysis for dominance indicated a main effect of hierarchical orientation manipulation, $F(2, 1812) = 370.17, p < .001, \eta^2_p = .29$, no main effect of decision-task condition, $F(1, 1812) = 0.52, p = .47, \eta^2_p < .001$, and also no significant interaction, $F(2, 1812) = 0.40, p = .67, \eta^2_p < .001$. Planned comparisons indicated participants in the dominance condition reported greater dominance ($M = 5.08, SD = 1.58$) than participants in the control condition ($M = 3.46, SD = 1.58$), $F(1, 1812) = 337.05, p < .001, d = 1.03$. Furthermore, participants in the control condition indicated greater dominance than participants in the prestige condition ($M = 2.71, SD = 1.44$), $F(1, 1812) = 72.67, p < .001, d = .50$. Overall, the dominance manipulation was effective.

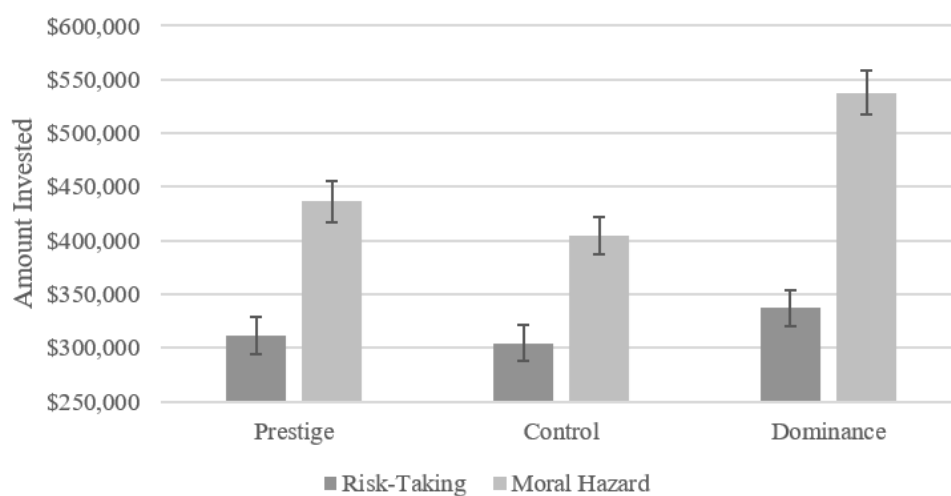
Similar analysis for prestige ratings revealed a main effect of the hierarchical orientation condition, $F(2, 1812) = 185.69, p < .001, \eta^2_p = .17$, no main effect of the decision-task condition,

$F(1, 1812) = 0.77, p = .38, \eta^2_p < .001$, and also no interaction, $F(2, 1812) = 0.16, p = .85, \eta^2_p < .001$. Planned comparisons indicated higher prestige ratings in the prestige condition ($M = 6.17, SD = .67$) than in the control condition ($M = 5.89, SD = .75$), $F(1, 1812) = 28.61, p < .001, d = .39$. Moreover, participants in the control condition reported greater prestige than those in the dominance condition ($M = 5.18, SD = 1.22$), $F(1, 1812) = 182.96, p < .001, d = .70$. Thus, the prestige manipulation was successful.

Moral hazard versus risk-taking. To test whether dominance explained participants' moral hazard behavior beyond risk-taking, we subjected the amount invested to a 3 x 2 ANOVA; this resulted in a significant main effect of both hierarchical orientation condition, $F(2, 1812) = 11.70, p < .001, \eta^2_p = .01$, and the decision-task condition, $F(1, 1812) = 94.07, p < .001, \eta^2_p = .05$. More importantly and in support of our hypothesis, the two main effects were qualified by a significant interaction, $F(2, 1812) = 4.28, p = .014, \eta^2_p = .01$.

Planned contrast analysis revealed no difference within the risk-taking condition between the prestige ($M = 311.50, SD = 299.07$) and control ($M = 304.35, SD = 295.46$) conditions, $F(1, 1812) = 0.08, p = .78, \eta^2 = .00$, prestige and dominance ($M = 337.00, SD = 294.05$) conditions, $F(1, 1812) = 1.01, p = .31, \eta^2 = .0006$, or dominance and control conditions, $F(1, 1812) = 1.69, p = .19, \eta^2 = .0009$. In contrast, within the moral hazard condition, those in the dominance condition made significantly larger investments ($M = 537.65, SD = 341.45$) than those in the control ($M = 404.44, SD = 307.46$), $F(1, 1812) = 27.60, p < .001, \eta^2 = .015$, and prestige conditions ($M = 436.19, SD = 331.04$), $F(1, 1812) = 15.61, p < .001, \eta^2 = .009$. There was no difference in investment amounts between the control and prestige conditions, $F(1, 1812) = 1.59, p = .21, \eta^2 = .0009$, as shown in Figure 1.

Figure 1: Study 3 Investment Decision



The error bars in the figure denote standard errors

Discussion

Study 3 helped rule out risk-taking as an alternative mechanism underlying the positive effect of dominance on moral hazard behavior. We found that participants in the dominance condition engaged in greater moral hazard behavior than those in the prestige and control conditions. Participants did not differ in their tendency to take risks across the three conditions. Importantly, when decision-makers could potentially bear the cost of a failed investment (i.e., in the risk-taking condition), we saw an overall decrease in the investment value as compared to the moral hazard condition where investors would not bear any potential cost. Additionally, this study offered further directional evidence in support of our hypotheses by including a control condition.

Study 4

Up to this point, we have tested the indirect effects predictions via correlational methods. Despite demonstrating the relationship across different samples and study designs, correlational methods limit our ability to make causal inferences for the impact of outcome accountability preferences on moral hazard decision-making. To ameliorate these concerns, Study 4 utilized a

process-by-moderation study design where we manipulated both hierarchical orientation (dominance vs. prestige) and accountability (process vs. outcome accountability) to demonstrate the causal role of outcome accountability in explaining the relationship between dominance and moral hazard decision-making. Our key findings are thus based on the interaction effect of hierarchical orientation and accountability.

Method

Sample and procedure. We pre-registered the sample size, exclusion criteria, hypotheses, and analyses in advance of the data collection (<https://aspredicted.org/rr2ab.pdf>). As per the pre-registration, a repeated measures power analysis suggested a minimum sample size of 208 with an effect size of $f = 0.15$. To further account for the interaction predictions and potential exclusions, we preregistered and recruited 1000 US participants via MTurk i.e., four times the minimum sample size (Giner-Sorolla, 2018). A total of 988 participants completed the study. In line with our pre-registered criteria, we excluded four participants for failing an attention check question, four participants for having either a duplicate or non-U.S. IP address, and eight participants for using an auto-completion macro. The final sample consisted of 972 participants (49.79% female; $M_{Age} = 40.93$, $SD_{Age} = 14.08$).

This study utilized a 2 (Hierarchical Orientation: Dominance [$N = 482$] vs. Prestige [$N = 490$]) x 2 (Accountability: Outcome [$N = 490$] vs. Process [$N = 482$]) between-subjects study design. All participants were told they would be presented with various decision-making scenarios where they would have the authority to decide as they saw fit. Next, participants received a brief description of dominance and prestige as the two leadership styles. They were then informed that they were expected to take the role of a leader who is either dominant or prestigious based on their random assignment. In the dominance condition, participants read:

In this study, we want you to take the role of a leader who is Dominant, irrespective of your preference. As a dominant-based leader, you are expected to make your decisions as someone who is assertive and direct in conveying your opinions and thoughts with others. It is important that you are known as someone who takes initiative and seize every opportunity to take control of the situation. It is extremely important that you are individually successful and known for your accomplishments. In short, you will be highly influential when you are dominant, assertive, authoritative and take control of others.

In the prestige condition, participants read:

In this study, we want you to take the role of a leader who is Prestigious, irrespective of your preference. As a prestige-based leader, you are expected to make your decisions as someone who cares about being respected and admired when conveying your opinions and thoughts with others. It is important that you are granted deference by others. It is extremely important that you are admired and held in high esteem. In short, you will be highly influential when you engage in actions that makes you respected, admired, a role-model and held in deference by others.

After completing the dominance and prestige manipulation checks, participants received the accountability manipulation (the words in the brackets denote first the outcome accountability manipulation and then the process accountability manipulation):

When it comes to making your decisions, we want you to keep in mind how you make your decision. It is important that you feel accountable to the [outcome / process]. You should evaluate yourselves on [your ability to obtain bottom-line results (e.g., getting the job done; other bottom-line indicators in other pursuits) / processes, procedures, or means used to obtain bottom-line results (e.g., adopting best practices). With [an outcome / a process] accountability focus, you should not evaluate yourself on [the processes, procedures, or means used to obtain these / whether you actually achieve the] bottom-line results.

In this way, both conditions underscored the importance of making a sound judgment and being accountable for either process or outcome. Furthermore, participants were reminded of their accountability focus within each scenario with a three-item checklist: “I hold myself accountable [to the outcome / for the process] of my decision-making,” “I am focused on the [bottom-line / best practices],” and “I should prioritize the [outcome or end results / process or means] of my decision-making.” Participants were then randomly introduced to five of the 12 moral hazard decision-making scenarios used in Studies 2a and 2b.

Measures

Manipulation check: dominance and prestige. We used a shortened eight-item dominance and prestige scale derived from the 17-item scale previously used ($a_{\text{prestige}} = .84$ and $a_{\text{dominance}} = .97$; Witkower et al., 2020).

Manipulation check: accountability. We used the same three items from Studies 1b, 2a, and 2b to measure accountability preference ($a = .79$).

Moral hazard. Participants reported their likelihood of engaging in moral hazard behavior on a scale from 0 to 100% following each scenario.

Results

Manipulation check. We performed a 2 x 2 ANOVA on participants' dominance, prestige, and accountability ratings, respectively. For all the analyses in this study, we coded dominance as 1, prestige as 0, outcome accountability as 1, and process accountability as 0. The analysis for dominance indicated a main effect of hierarchical orientation, $F(1, 968) = 2173.36, p < .001, \eta^2_p = .69$, no main effect of accountability condition, $F(1, 968) = 0.01, p = .91, \eta^2_p < .001$, and also no significant interaction, $F(1, 968) = 0.86, p = .35, \eta^2_p = .009$. Participants in the dominance condition reported greater dominance ($M = 6.29, SD = 1.14$) than participants in the prestige condition ($M = 2.31, SD = 1.49$), $F(1, 970) = 2175.56, p < .001, d = 2.99$. Similar analysis for prestige ratings revealed a main effect of the hierarchal orientation condition, $F(1, 968) = 279.96, p < .001, \eta^2_p = .22$, and no main effect of the accountability condition, $F(1, 968) = 3.14, p = .076, \eta^2_p = .003$, but unexpectedly a significant interaction, $F(1, 968) = 6.94, p = .009, \eta^2_p = .007$. Participants in the prestige condition reported higher prestige ratings in the prestige condition ($M = 6.13, SD = .86$) than in the dominance condition ($M = 4.73, SD = 1.65$), $F(1, 970) = 276.50, p < .001, d = 1.07$. Upon decomposing the interaction we found that the prestige mean

was higher in the dominance-outcome cell ($M = 4.91$, $SD = 1.58$) compared to the dominance-process cell ($M = 4.54$, $SD = 1.71$), $F(1, 968) = 9.63$, $p = .002$, $\eta^2 = .01$. This finding suggests, given the higher prestige mean in the dominance-outcome cell, that our results based on dominance manipulation will be more conservative than if we had not observed any interaction. Overall, the dominance and prestige manipulations were successful.

Similar analysis for accountability ratings revealed no main effect of the hierarchical orientation condition, $F(1, 968) = 0.30$, $p = .58$, $\eta^2_p < .001$, a significant main effect of the accountability condition, $F(1, 968) = 833.92$, $p < .001$, $\eta^2_p = .46$, and no interaction of the two manipulations, $F(1, 968) = 1.05$, $p = .31$, $\eta^2_p = .001$. Participants indicated significantly higher outcome accountability ratings in the outcome condition ($M = 7.49$, $SD = 1.54$) than in the process condition ($M = 3.97$, $SD = 2.20$), $F(1, 970) = 834.35$, $p < .001$, $d = 1.85$. Thus, the accountability manipulations were successful.

Moral hazard. Since each participant responded to five different moral hazard scenarios, we first converted our data to the long format to account for the variance associated with the nested design; this resulted in a total of 5,832 observations. We ran a mixed-effect multilevel regression analysis at the participant level and included a fixed effect of each moral hazard scenario. Our analyses revealed significant main effects of hierarchical orientation ($b = 18.4$, $SE = 1.21$, $p < .001$, Table 4, Model 5) and accountability ($b = 10.67$, $SE = 1.21$, $p < .001$, Table 4, Model 5) such that dominance and outcome accountability were positively associated with moral hazard decision-making. Importantly, these two main effects were qualified by a significant interaction, ($b = -5.32$, $SE = 2.41$, $p = .027$, Table 4, Model 6).

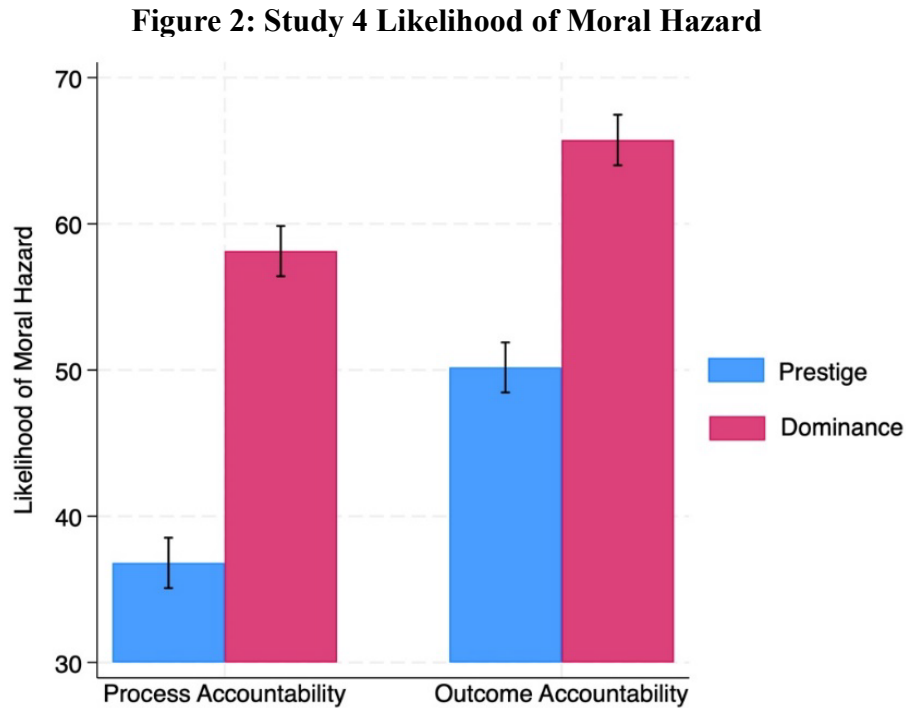
Table 4*Study 4 Regression Results Using Random Coefficient Modeling*

MORAL HAZARD DECISION-MAKING						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Hierarchical Orientation (HO) ^a	18.352***	21.118***			18.397***	21.079***
	(1.207)	(1.711)			(1.205)	(1.708)
Accountability (A) ^b	10.632***	13.351***			10.674***	13.312***
	(1.207)	(1.697)			(1.207)	(1.695)
HO X A		-5.484*				-5.320*
		(2.410)				(2.406)
Gender ^c				-2.822*	-2.348	-2.275
				(1.405)	(1.223)	(1.221)
Age				-.010	-.055	-.055
				(.050)	(.044)	(.043)
Scenario Fixed Effects	Included	Included	Included	Included	Included	Included
Intercept	57.718***	43.121***	41.722***	59.557***	46.548***	45.130***
	(1.501)	(1.692)	(1.799)	(2.542)	(2.428)	(2.508)
<i>AIC</i>	57253.1	56982.4	56975.6	57254.4	56982.3	56975.8
<i>BIC</i>	57346.5	57089.1	57089.0	57361.2	57102.4	57102.6
Log Likelihood	-28612.5	-28475.2	-28470.8	-28611.2	-28473.1	-28468.9

N = 5832; *p < .05, ** p < .01, *** p < .001. Standard errors are shown in parentheses; a: 0 = prestige, 1 = dominance; b: 0 = process, 1 = outcome; c: 1 = male, 2 = female.

Upon decomposing the interaction, we observed that the maximum moral hazard decision-making occurred in the dominance-outcome cell ($M = 65.73$, $SD = 33.75$) and the difference in the means was significant compared to the means in the prestige-outcome cell ($M = 50.18$, $SD = 33.48$, $F(1, 5828) = 158.42$, $p < .001$, $\eta^2 = .027$) and prestige-process cell ($M = 36.81$, $SD = 33.69$, $F(1, 5828) = 547.74$, $p < .001$, $\eta^2 = .086$). The difference between the two dominance cells was also significant ($M = 50.18$, $SD = 33.48$, $F(1, 5828) = 37.28$, $p < .001$, $\eta^2 =$

.006). Notably, participants in the prestige-outcome cell displayed significantly greater moral hazard decision-making than those in the prestige-process cell, $F(1, 5828) = 117.01, p < .001, \eta^2 = .02$, thus supporting outcome accountability as the underlying mechanism. Additionally, moral hazard was significantly lower in the prestige-outcome cell compared to the dominance-process cell, $F(1, 5828) = 40.75, p < .001, \eta^2 = .08$, highlighting the importance of dominance in driving moral hazard decision-making. Overall, these patterns of results via the process of moderation, as shown in Figure 2, strongly support outcome accountability as the underlying mechanism driving the effect of dominance on moral hazard decision-making.



The error bars in the figure denote standard errors.

Discussion

Consistent with our previous studies, in Study 4 we found a significant and positive main effect of dominance and outcome accountability on moral hazard behavior. Importantly, the main effects were qualified by a significant interaction. In the outcome accountability manipulation,

participants in the prestige condition engaged in more moral hazard decision-making than participants in the prestige and process accountability condition. Likewise, participants in the high dominance and outcome accountability condition engaged in greater moral hazard decision-making than participants in the high dominance and process accountability condition. These results demonstrate that when outcome accountability is salient, it leads individuals to engage in greater moral hazard behavior, regardless of their underlying hierarchical orientation. Furthermore, we also found that participants in the high dominance condition engaged in greater moral hazard behavior than participants in the prestige condition irrespective of the accountability condition. This outcome further supports our main contention that dominance is associated with greater moral hazard behaviors than prestige.

It is worth mentioning that in a moderated mediation design, one generally observes the effect similar to the comparison condition when the mechanism is turned off. However, we did not observe that for two possible reasons: first, because we expected dominant individuals to engage in greater moral hazard decision-making consistent with our hypothesis; and second, the two manipulations (dominance/prestige and accountability) are probably not equal in strength. As indicated by effect sizes, the dominance manipulation was much stronger ($d = 2.99$) than the accountability manipulation ($d = 1.85$); hence, the effect for dominance might be more pronounced because of that as well. Nonetheless, the tendency of participants in both the prestige and dominance conditions to engage in greater moral hazard behavior in the outcome (vs. process) accountability condition supports outcome accountability as the underlying mechanism.

Study 5

The purpose of Study 5 was to extend our findings using a behavioral variable that had tangible consequences for the decision-maker. Additionally, we wanted to demonstrate that

dominance distinctively predicts moral hazard behavior and does not merely reflect tendencies toward self-interest or risk-taking. In situations where it is rational to behave in a self-interested manner, we do not expect any differentiation based on the levels of dominance as individuals should engage in such behaviors irrespective of their underlying disposition. To this end, we presented participants with different investment scenarios reflecting moral hazard, risk-taking, or pure self-interest. Regarding risk-taking, we sought to replicate our findings from Study 3 by testing a different form of risk-taking and using a correlational design to complement the experimental evidence provided. In Study 5, the risk-taking did not involve incurring a loss by taking a risk, but simply impacted one's potential gain. Finally, to make the findings externally valid and align participants' interests with tangible outcomes, we paid the participants monetary bonuses as per their investment decisions and corresponding outcomes.

Method

Sample and procedure. We set a target of recruiting 550 U.S. participants through MTurk. In response, 544 participants completed the survey. There were no duplicate IP entries in our sample and manual checking revealed that none of the IP addresses were outside of the U.S. Therefore, we did not exclude any participants from the final sample (54% female; $M_{age} = 39.13$ y, $SD_{age} = 13.38$). Given the repeated measure design, this sample size would allow us to detect a minimum effect size of $r = 0.06$ with 80% power.

We utilized a modified version of Study 1a's research design. Participants completed the dominance and prestige questionnaire before being informed that this was the second part of a two-part study and that they would be taking the role of an investor. As in Study 1a, there was no first part of the study nor actual participants providing investment choices. We described the design as such to enhance the realism that behaviors in this study would impact the monetary

outcome for themselves and others. Participants were instructed to make an investment decision that might benefit their clients and they had the opportunity to earn bonuses based on the success of their decisions. Participants were randomly presented with 12 different investment decisions with two options.

Four of the 12 investment scenarios examined participants' tendencies to engage in moral hazard behaviors. As in Study 1a, the scenarios consisted of two investment options. One option had a guaranteed chance to earn their client a set amount with a guaranteed commission of 15% for the participant. The other option was non-guaranteed, with a 50% chance of success, where the client's money would be doubled, and a 50% chance of failure, where the client's money would be lost entirely. If successful, the participant stood to earn a 25% commission. Importantly, in the non-guaranteed option, the client had a lower expected value on the investment return than in the guaranteed option. In contrast, the investor (i.e., the participant) had a larger expected value in the non-guaranteed option compared to the guaranteed option. An example investment scenario included a guaranteed option to earn their client's \$1 investment a total return of \$3 and earn the participant a \$0.45 bonus. The non-guaranteed option had a 50% chance of earning their client \$4.50 and would potentially earn the participant a bonus of \$1.13. In this case, the client's expected value was \$2.25 and the expected value for the investor was \$0.56. Therefore, by selecting the non-guaranteed option, the participant made a moral hazard decision wherein the client bore the risk with a lower expected value—25% reduction (\$3 vs. \$2.25)—and the participant's expected values increased—25% (\$0.45 vs. \$0.56).

Four of the 12 investment scenarios measured pure self-interest. In these scenarios, one option had a 100% chance to earn the client a set amount with a guaranteed commission of 15% for the participant. The alternative option had a 50% chance of success and a 50% chance of

failure, where the investment would be doubled or lost. However, unlike in the moral hazard scenarios, the participant stood to earn a 25% commission regardless of the investment's success. Like the moral hazard scenarios, in the non-guaranteed option, the client had a lower expected value on the investment return compared to the guaranteed option, while the investor had a larger expected value in the non-guaranteed option compared to the guaranteed option. However, the investor in this situation would always make more money for investing the client's money in the non-guaranteed (vs. guaranteed) option. Hence, it made sense for individuals to exercise this non-guaranteed option as their bonus was not tied to the investment's success. In this way, the situation allowed us to test whether increasing dominance is associated with greater self-interest. An example investment scenario included a guaranteed option to earn their client's \$1 investment a total return of \$5.50 and earn the participant a \$0.83 bonus. The other non-guaranteed option had a 50% chance of earning their client \$9.50 and would earn the participant a guaranteed bonus of \$2.38. Therefore, by selecting the non-guaranteed option, the participant made a purely self-interested decision wherein the client bore the risk with a lower expected value—a 14% reduction (\$5.50 vs. \$4.75)—and the participant's guaranteed outcome increased—by 288% (\$0.83 vs. \$2.38).

The final four investment scenarios captured risk-taking. One option had a guaranteed chance to earn the client a set amount with a commission of 20% for the participant. The alternative option was non-guaranteed, with a 50% chance of success and a 50% chance of failure, where the investment would be doubled or lost. If successful, the participant stood to earn a 20% commission. Importantly, in both the guaranteed and non-guaranteed options, the client and investor had the same expected value on return. For example, the guaranteed option would earn the client's \$1 investment a return of \$3 and earn the participant a \$0.60 bonus. The

non-guaranteed option had a 50% chance of earning the client \$6, with an expected value of \$3, and would earn the participant a bonus of \$1.20, with an expected value of \$0.60. Therefore, because the expected values were the same across the two options, investing in the second option captured risk-taking preferences. After making all their investment decisions, participants indicated their accountability preference.

Measures

Dominance and prestige. We used the same 17-item scale from previous studies to measure dominance and prestige ($a_{prestige} = .91$ and $a_{dominance} = .94$).

Accountability. We used the same single trade-off item from previous studies to capture participants' preference between pure process or pure outcome accountability.

Investment decisions. We used a binary decision where the participant selected either the guaranteed investment or the investment that qualified as moral hazard, risk-taking, or pure self-interest.

Results

Moral hazard versus risk-taking versus self-interest. Out of the four investment opportunities, we found that participants selected, on average, the moral hazard option 1.35 times ($SD = 1.47$), the risk-taking option 1.53 times ($SD = 1.58$), and the pure self-interest option 2.16 times ($SD = 1.64$). We found that the pure self-interest option was selected significantly more than the moral hazard option, $t(543) = 13.99$, $p < .001$, $d = 1.20$, or the risk-taking option $t(543) = 9.75$, $p < .001$, $d = .84$, and that risk-taking was selected more than the moral hazard option $t(543) = 3.25$, $p = .001$, $d = .28$.

Moral hazard. Since participants responded to four different moral hazard investment scenarios, we ran our analysis in two different ways. The resulting analyses held both with and

without controlling for gender and age for all our analyses; we report results with the control variables included. First, we counted how many times (out of four) participants chose the moral hazard option. Since this was a count variable, we ran a Poisson regression to test our analysis. In support of our hypotheses, we found a significant effect of dominance on moral hazard behavior ($b = .08, SE = .03, p = .007$); there was no relationship with prestige ($b = .08, SE = .05, p = .16$). Second, since each participant attempted multiple investment scenarios, we ran a more conservative multilevel logit regression by converting the data to the long format and examining participants' investment choices with 1 coded as moral hazard and 0 as the guaranteed option. We also included a fixed effect of each moral hazard investment scenario. In support of our hypothesis, we found that dominance positively predicted moral hazard behavior ($b = .30, S.E. = .12, p = .017$). There was no relationship with prestige ($b = .24, SE = .20, p = .22$).

Self-interest and risk-taking. We performed the same analysis for self-interest and risk-taking as well. There was no relationship between dominance and self-interest or risk-taking when using total count as the dependent variable ($b_{self-interest} = .01, SE = .03, p = .74$; $b_{risk-taking} = .02, SE = .03, p = .57$) or running the multilevel logit regression ($b_{self-interest} = .03, SE = .13, p = .85$; $b_{risk-taking} = .10, SE = .13, p = .46$). This result suggested that individuals' underlying dominance did not matter when selecting among these options. Likewise, prestige was also unrelated to both self-interest and risk-taking according to Poisson ($b_{self-interest} = -.02, SE = .04, p = .61$; $b_{risk-taking} = .06, SE = .05, p = .24$) as well as multilevel logit regression ($b_{self-interest} = -.06, SE = .21, p = .79$; $b_{risk-taking} = .22, SE = .20, p = .28$). In sum, this analysis revealed that dominance, as well as prestige, did not predict self-interest or risk-taking behavior.

Accountability. Since participants responded to the accountability measure only once, we ran an ordinary least squares regression with dominance and prestige simultaneously

predicting outcome accountability while controlling for participants' gender and age. In support of our hypothesis, we found that dominance was related to outcome accountability ($b = .36$, $SE = .07$, $p < .001$) while prestige was unrelated ($b = -.06$, $SE = .12$, $p = .59$).

Indirect effect. To test for the indirect effect, we ran a bootstrapped GSEM with 5,000 resamples. GSEM allows the user to run simultaneous multiple regressions depending on the nature of the mediator or dependent variable while accounting for nesting within the data. We ran a linear regression for the mediator and logit regression for the dependent variable with dominance, prestige, gender, and age as the predictor variables. In support of our hypothesis, we found that the indirect effect of dominance via preference for outcome accountability on moral hazard behavior was significant ($b = .02$, $S.E. = .01$, $CI_{95\%} [.003, .038]$).

Discussion

Study 5 advanced our findings by replicating the results from previous studies and providing valuable behavioral evidence of moral hazard decision-making. Participants believed they were making an investment decision for 12 of their fellow participants that impacted their payment and had material consequences for the individuals involved. Despite giving participants explicit instructions to act in their client's best interest, we found that dominance led to greater moral hazard behaviors—an effect mediated by preferences for outcome accountability. Additionally, dominance impacted moral hazard behavior but not risk-taking or self-interested behaviors. Importantly, these findings build on those of Study 3, given that we did not find evidence that dominance was associated with greater risk-taking. Specifically, Study 3 operationalized risk-taking as the ability to face a loss in pursuing a risky option while comparing it to moral hazard decision-making. Study 5 conceptualized risk-taking by selecting a risky versus a guaranteed option, which would return a higher gain despite the same expected

value as the guaranteed option. Furthermore, Study 3 tested this result by manipulating dominance and prestige, thereby offering greater evidence of causality, whereas Study 5 was correlational in nature but offered enhanced external validity. Together, our results suggest that when decision-makers are free to pursue self-interest without risk, their underlying disposition—dominance or prestige—does not matter.

General Discussion

We set out to examine if decision-makers' hierarchical orientation impacted their motivational approach to goals that could, in turn, make them more prone to moral hazard behaviors. By integrating the dominance-prestige framework with research on goal focus and accountability preferences, we found that dominant decision-makers engaged in greater moral hazard behaviors. There was no consistent evidence of a corresponding relationship between prestige and moral hazard behaviors. Moreover, we found that dominant individuals' moral hazard decision-making was driven by their prioritization of outcome over process accountability. Our results indicate that this outcome-focused mindset leads dominant individuals to pursue self-interested goals that expose others to undue risk.

Across 13 studies, utilizing diverse populations, study designs, and operationalizations of key variables, we provide correlational and experimental evidence that dominance positively predicts moral hazard behavior. Importantly, we document this relationship in a variety of moral hazard contexts, including financial, environmental, public investment, and public health and safety contexts containing real-world scenarios (five studies 2a, 2b, 4, S2 and S3 utilized a dependent sampling approach covering various moral hazard contexts). These diverse study designs enabled us to capture moral hazard intentions and observable behaviors. In addition, we demonstrate that moral hazard decision-making among dominant individuals is not explained by

a general tendency to take risks or the opportunity to engage in self-interested behaviors. Furthermore, we provide support for the independent effect of dominance on moral hazard decision-making by accounting for alternative explanations of self-interested behaviors such as machiavellianism, narcissism, personality, empathy, sense of power, and self-concern (see SI for Studies S2 and S3). Importantly, we also demonstrate the role of outcome accountability as a mediator of this effect via the process of moderation. Taken together, our results suggest that dominant decision-makers' tendency to engage in moral hazard behavior is driven by a preference toward outcome over process accountability, with strong implications for relevant theory and for decision-making in practice.

Theoretical Contributions

These findings offer several notable theoretical contributions. First, we identify a consequential individual antecedent associated with moral hazard behavior. This is a critical point, given that much of the existing work has focused on the role of formal authority or feeling psychologically powerful as a primary antecedent (Pitesa & Thau, 2013). While informative, such broad strokes paint everyone with decision-making authority as prone to moral hazard decision-making—a generalization that contradicts real-world and theoretical observations (Scholl et al., 2022). Contrastingly, our use of the dual model of social influence provides a more nuanced understanding of the differences in leaders' responses to moral hazard contexts, identifying not just leaders but dominant leaders as prone to moral hazard behaviors.

Second, we demonstrate the psychological mechanism through which this dominance-related tendency toward moral hazard decision-making occurs. To do so, we draw upon the goal focus and accountability literatures to highlight individual-level differences between dominant and prestigious individuals' accountability preferences. We theorized and found that dominant

individuals focus more on their end goals than on the means by which they pursue them; this makes these individuals susceptible to reckless actions as long as such behaviors are directed toward their desired ends. The preference for outcome accountability over process accountability explained the relationship that we observed between dominance and moral hazard decision-making. More importantly, our findings have substantial implications for policymakers. That is, they imply that external accountability systems with formal rules and enhanced regulations are vital to ensure that dominant leaders feel accountable for not only the outcomes but also the process of their decisions (Pitesa & Thau, 2013).

Third, and relatedly, we respond to calls in the accountability literature to better understand the antecedents associated with felt accountability perceptions (Hall et al., 2017). From an individual perspective, the notion of conscientiousness relates to feeling more generally accountable for one's actions (Frink & Ferris, 1999). Interpersonal factors such as leader-member exchange and managerial monitoring (Mero et al., 2014; Rutkowski & Steelman, 2005) also promote greater general feelings of accountability. However, there is little understanding of the degree to which people subjectively prefer different types of accountability (i.e., what individual characteristics are associated with prioritizing outcomes over process or vice versa). By employing the theoretical framework of dominance and prestige, our work documents an individual's hierarchical orientation as one factor that leads to a trade-off between outcome and process accountability. We focus on hierarchical orientation to emphasize how those in formal positions of authority and decision-making discretion can potentially undermine those they lead and represent (Freund & Hennecke, 2015).

Finally, these studies add to the growing literature that seeks to discern how and why dominance represents a successful means to accrue and maintain high social rank. A primary

feature of the dominance orientation is the use of self-interested decision-making in response to perceived threats to one's high-ranking position (Case & Maner, 2014; Maner & Mead, 2010; Mead & Maner, 2012). Yet this paper highlights how dominance is related to self-interested decision-making in contexts where there is an opportunity to acquire resources, even when there is no threat to the individual's status. Thus, we suspect that dominant leaders' tendency to engage in self-serving behaviors might not manifest simply as a means to survive, but as a strategic choice to shore up their credentials and further reinforce their high-status position.

Limitations and Future Directions

It must be noted that despite documenting our hypothesized effects across various populations, we did not observe the behaviors of actual leaders. To account for this limitation, we recruited an MBA sample, comprised of international individuals at the career stage most proximal to them stepping into positions of power. Additionally, we recruited professionals in the finance industry, verified by a third-party market research firm, to approximate both an applied sample and paradigm to enhance external validity. Nevertheless, future research could strengthen the external validity of the documented results by observing current leaders.

Another important extension of this work would be to explore how the role of risk to the self may impact moral hazard decision-making. We relied on a prototypical definition of moral hazard behavior by running studies where the risk to the decision-maker was minimal. However, there can be moral hazard scenarios where the risk to the decision-maker is still less than that borne by others, but not totally negligible. It would be informative to examine the relationship between dominance and moral hazard decision-making over the range of risk associated with the decision-maker.

Similarly, across our studies, we do not specifically examine the long-term cost of moral hazard decisions for the decision-maker. This focus on the short-term impact is intended to mirror the phenomenon where long-term costs often include a loss of trust, reputation hit, etc., and are generally implied in the context we used. However, it may have resulted in some participants not realizing the dangers of moral hazard decision-making in the long term. Although we tried to reduce this concern by using an applied sample, future research may benefit from examining the long-term implications of moral hazard decision-making.

It is also important to note that for most of the studies, we found prestige means to be higher than dominance means. While this result should not affect our main conclusions since higher prestige ratings should buffer the impact of dominance, it is still worth mentioning. We further observed that moral hazard risk-taking was not consistently related to prestige, which probably reflects two opposing motivations (i.e., self- and other-oriented motives) underlying prestige. Future research could try to delineate the role of these two opposing motivations. At the same time, it will also be informative to examine how change in leader's recent status and their underlying orientation may influence their moral hazard behaviors. Existing research have shown that recent change in individual's status can have an effect on their underlying psychology and decision-making (Kakkar et al., 2019; Marr & Thau, 2014).

A further extension of our research would be to examine the implicit factors or signals that alter leaders' accountability preferences and tilt them more in favor of outcomes or processes in the absence of formal accountability rules or systems. This work would offer tangible guidance to organizations and leaders in designing systems to encourage employees to be more accountable as per the organization's objective while mitigating bureaucratic systems.

In the same vein, another fruitful direction could be to investigate whether leaders' tendencies to make moral hazard decisions trickle down to their subordinates (Kakkar & Sivanathan, 2021).

Conclusion

Public health crises, global financial recessions, and climate catastrophes represent some of the 21st century's greatest challenges and most difficult decisions. The present research aims to help us navigate these challenges by elucidating when decision-makers prioritize their self-interest while transferring the risks of their decisions to others. To this end, we found that a dominant hierarchical orientation positively relates to moral hazard decision-making. More specifically, dominant decision-makers focus on achieving their desired outcomes at the expense of best practices and will engage in behaviors that benefit themselves despite the potential cost to others. Our work identifies the differential motivations that inform such decision-making and highlights the indisputable risk that it poses to current and future populations.

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SUPPLEMENTARY INFORMATION

for

Perilous and Unaccountable: The Positive Relationship between Dominance and Moral Hazard Behaviors

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Table S1. Overview of Studies

Study #	Observations and Sample	Study Type and Design	Main Contribution	Sensitivity Analysis- Effect sizes 80% Power
1.a	1,050 - Financial Professionals	Correlational Repeated Measures- 5 Investment Decisions.	Utilizing a sample of experienced investors, we found dominance was positively related to moral hazard behavior.	$r = 0.09$
1.b	369 - MBA Students	Correlational Time Lagged - Accountability Preference	Surveying a diverse cultural population of future leaders, we found dominance was related to preferring outcome accountability.	$r = 0.15$
2.a - Pre Reg	1,740 - U.S M-Turk	Correlational Repeated Measures- Test Full Model	We found dominance was related to both outcome accountability and moral hazard behavior in context that involved public health and organizational decision-making. Furthermore, we found support for the complete model.	$r = 0.07$
2.b - Pre Reg	2,370 - U.S Prolific	Experimental Repeated Measures: 2 Conditions- Dominance and Prestige	Expanding beyond correlational designs, we experimentally manipulated dominance and prestige and found support for the complete model.	$d = .11$
3 - Pre Reg	1,818 - U.S M-Turk	Experimental: 6 Conditions- Hierarchical Orientation [Dominance vs. Control vs. Prestige] x Decision Task [Risk-Taking vs. Moral Hazard]	Utilizing an experimental design, we provide directional support for dominance and moral hazard behaviors and provide evidence that dominance is not associated with general risk-taking behavior.	$f = .08$

4 - Pre Reg	5,832 - U.S M-Turk	Experimental: 4 Conditions- Hierarchical Orientation [Dominance vs. Prestige] x Accountability [Process vs. Outcome]	Using process of moderation design, we found outcome accountability increased moral hazard decision making within the prestige condition and that a process accountability focus reduced moral hazard decision making for the dominance condition.	$f = .05$
5	6,528 - U.S M-Turk	Correlational Repeated Measures- Test Full Model	This study again captured a behavioral outcome of moral hazard behavior and provided support for the complete model, whilst ruling out dominance as being associated with greater risk- taking and or self-interested decision-making.	$r = 0.06$
S1	284- European Behavioral Lab	Correlational Time Lagged - Single investment decision	This study provided additional support for Study 1 with a more diverse sample from a major international metropolitan city. We found dominance was positively related to moral hazard behavior.	$r = 0.17$
S2 - Pre Reg	2,460 - U.S M-Turk	Correlational Repeated Measures - Test Alternative Explanations	To provide additional confidence in the incremental effects of dominance on moral hazard decision-making, we accounted for viable alternative explanations such as Machiavellianism, Narcissism, Empathy, and the Big 5 Personality Traits	$r = 0.06$

S3 - Pre Reg	2,370 - U.S M-Turk	Correlational Repeated Measures - Test Alternative Explanations	Replicated the same design as Study S2 by accounting for two additional alternative explanations— Sense of Power and Self-Concern	$r = 0.06$
S4 - Pre Reg	464 - U.S Prolific	Experimental: 2 Conditions- Dominance and Prestige	Provide additional support for our causal claims by manipulating hierarchical orientation. We found that the dominance condition reported more moral hazard behavior.	$d = .26$
S5 - Pre Reg	541 - U.S Prolific	Experimental : 2 Conditions- Dominance and Prestige	Provide additional support for our causal claims by manipulating hierarchical orientation. We found that the dominance condition reported a greater preference for outcome accountability.	$d = .24$
S6	1,048 - US Prolific	Experimental: 4 Conditions- Hierarchical Orientation [Dominance vs. Prestige] x Discretion [Yes vs. No]	To demonstrate that formal power or authority is not sufficient to explain moral hazard decision-making. Rather dominance coupled with authority or discretion leads to greater moral hazard behaviors.	$f = .09$

Study S1

The goal of this study was to examine whether dominance positively predicts moral hazard decision-making.

Method

Sample and procedure. Our study involved 317 participants recruited via a European business school's behavioral lab. We excluded 31 participants for failing an attention check question and two for incoherent responses. Thus, the final sample consisted of 284 participants (65% female; $M_{age} = 26.51$, $SD_{age} = 8.87$). A sensitivity analysis revealed that this sample size, would have detected a minimum effect size of $r = 0.17$ with 80% power.

Participants arrived at the behavioral lab to participate in multiple studies over a 60-minute period. At the end of an unrelated first study, participants reported their hierarchical orientation by responding to the 17-item dominance-prestige scale. A research assistant then debriefed participants of the first study. To further emphasize psychological separation, unrelatedness, and the distinct purpose of the next study, the research assistant opened a separate study on participants' computer screens and gave a different set of instructions for the new study.

The second study captured the participants' response to a prevalent moral hazard investment paradigm (Pitesa & Thau, 2013). Participants were instructed to imagine that they worked for a large financial services company as a fund manager and were given full authority and autonomy in making their client's financial decisions. The paradigm presented participants with an opportunity to invest their client's money. However, there was little information about the investment opportunity besides the expected returns. Specifically, participants could invest up to £1 million of the client's money. The investment had a 50% chance of doubling the client's

investment and a 50% chance that the client could lose the invested money. As the investment manager, participants stood to make a 20% commission if the investment was successful and would not face any monetary penalty if the investment was unsuccessful. Structured in this manner, the scenario resembled real-life decisions where fund managers invest their clients' money and share in the upside (via commissions) while not bearing the direct risk for the associated downside (losses of a failed investment).

Measures

Dominance and prestige. Participants rated their dominance and prestige tendencies using the validated 17-item dominance-prestige scale (Cheng et al., 2010). Prestige items included “I would prefer to be a leader... who is respected and admired by other members” and “who is sought for advice on some matters by others.” Dominance items included “I would prefer to be a leader... who enjoys control over other members” and “who might be feared by some members” (1 = “not at all” to 7 = “very much”; $\alpha_{prestige} = .85$ and $\alpha_{dominance} = .90$).

Moral hazard. The amount of client's money invested (£0–1,000,000) by participants indicated the degree of their moral hazard behavior. The reported amount is divided by 1,000 and should be interpreted in thousands of pounds.

Results

Descriptive statistics and correlations among study variables are presented in Table S2.

Moral hazard. We ran an ordinary least squares (OLS) regression with dominance and prestige simultaneously predicting moral hazard while controlling for participants' gender and age. In support of our hypothesis, we found that dominance was positively related to moral hazard ($b = 57.45$, $SE = 15.70$, $p < .001$; Model 4, Table S3). There was no relationship between prestige and moral hazard ($b = -19.15$, $SE = 27.28$, $p = .48$; Model 4, Table S3).

Table S2. Descriptive statistics & correlations for Study S1

Variables	M	SD	1	2	3	4
1. Prestige	6.29	.65				
2. Dominance	2.52	1.15	-.11			
3. Moral Hazard	£383.68K	£302.34K	-.06	.21***		
4. Gender ^a	1.65	.48	.02	-.23***	.05	
5. Age	26.51	8.87	-.03	.001	-.10	-.18**

N = 284; *p < .05, ** p < .01, *** p < .001; a: 1 = male, 2 = female.

Table S3. Study S1 regression results

	MORAL HAZARD			
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>
Constant	437.61*** (92.06)	227.42* (105.95)	624.37** (197.53)	352.28 (207.10)
Controls				
Gender ^a	18.95 (38.18)	51.98 (38.34)	19.65 (38.17)	51.78 (38.37)
Age	-3.22 (2.05)	-2.91 (2.01)	-3.28 (2.06)	-2.95 (2.01)
Independent Variables				
Dominance		58.61*** (15.60)		57.45*** (15.70)
Prestige			-29.62 (27.72)	-19.15 (27.28)
R ²	.004	.05	.02	.05

N = 284; *p < .05, ** p < .01, *** p < .001. SEs are shown in parentheses; a: 1 = male, 2 = female.

Discussion

Consistent with our predictions, we found that more dominant individuals displayed a greater willingness to engage in moral hazard behavior by putting their client's capital at risk to maximize their commissions. We found no relationship between prestige and moral hazard behavior.

Study S2

Study S2 extends our findings by examining the independent effect of dominance in predicting moral hazard decision-making over several other personality predictors. To this end, we considered several potentially relevant variables including Machiavellianism, Narcissism, Trait Empathy, and Big 5 Personality Inventory. Previous empirical research suggests a relationship between Machiavellianism and self-interested behavior and Narcissism with self-interested behavior. As theory explains, the relationship between Machiavellianism, Narcissism, and self-interested behavior exists as a result of a more self-absorption that focuses on self-enhancement via agentic orientations toward getting what one wants and a general disregard for others (Jonason et al., 2010; Judge et al., 2009; Kausel et al., 2015; Semenyina & Honey, 2015). Moreover, research also suggest a positive relationship between empathy and prosocial behaviors as those high on empathy tend to experiences others emotions as their own and act in a more considerate manner (de Waal, 2008; Depow et al., 2021; Eisenberg & Miller, 1987; Hoffman, 2008). Relatedly, we also controlled for the Big 5 personality inventory given its association with other consideration and self-interested tendencies in various meta-analyses (Chiaburu et al., 2011; Hilbig et al., 2014; Liao et al., 2022; Parks-Leduc et al., 2015) and to rule out any shared variance between dominance and Big 5 personality factors. Overall, this study aimed to demonstrate the unique effect of dominance on moral hazard behaviors over and above related variables.

Method

Sample and procedure. We pre-registered the sample size, exclusion criteria, hypotheses, and analyses in advance of data collection (<https://aspredicted.org/sp2mw.pdf>). As per the pre-registration, the power analysis suggested a minimum sample size of 461 for 80% power. To account for participants who might be dropped from the analysis, we preregistered and recruited

500 U.S. participants via Amazon Mechanical Turk (MTurk). A total of 499 participants completed the study, of which seven were dropped for having a non-U.S. IP addresses, leaving 492 participants (50% female; $M_{age} = 39.19$ y, $SD_{age} = 12.35$).

Participants first reported their hierarchical orientation by responding to the dominance-prestige scale. Participants then completed our control variables: Big Five Inventory, Machiavellianism, Narcissism, and Empathy. Participants then were randomly assigned to five of the same 12 moral hazards used in Study 2a. After reading each scenario, participants indicate how likely they would be to engage in each moral hazard behavior.

Measures

Dominance and prestige. We used the same 17-item scale from Studies 1a–2a to measure dominance and prestige ($a_{prestige} = .89$ and $a_{dominance} = .88$). However, instead of having participants indicate the type of leader they would prefer to be, the stem of the prompt read, “Please indicate the extent to which each statement accurately describes you”.

Big Five Inventory (BFI-2-S). Participants completed a 30-item five factor personality assessment with six items assessing each factor. Participants read the following before responding, “Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please indicate the extent to which you agree or disagree with that statement.”; 1 = “disagree strongly” to 5 = “agree strongly” (Soto & John, 2017). Extraversion items included “Is full of energy” ($a_{extraversion} = .80$); Agreeableness items included “Is compassionate, has a soft heart” ($a_{agreeableness} = .76$); Conscientiousness items included “Is reliable, can always be counted on” ($a_{conscientiousness} = .83$); Negative Emotionality items included “Worries a lot” ($a_{negativeemotionality} = .87$); and Open-Mindedness items included “Is fascinated by art, music, or literature” ($a_{open-mindedness} = .82$).

Machiavellianism. Participants indicated their agreement with a nine-item Machiavellianism scale; 1 = “disagree strongly” to 5 = “agree strongly” (Jones & Paulhus, 2014). Items included “Whatever it takes, you must get the important people on your side” and “Make sure your plans benefit yourself, not others” ($\alpha = .84$).

Narcissism. Participants indicated their agreement with a nine-item Narcissism scale; 1 = “disagree strongly” to 5 = “agree strongly” (Jones & Paulhus, 2014). Items included “I know that I am special because everyone keeps telling me so” and “I have been compared to famous people” ($\alpha = .80$).

Empathy. Participants indicated their agreement with a seven-item Empathy scale; 1 = “does not describe me at all” to 5 = “describes me very well” (Davis, 1983). Items included “I often have tender, concerned feelings for people less fortunate than me” and “When I see someone being taken advantage of, I feel kind of protective towards them” ($\alpha = .87$).

Moral hazard. Participants reported their likelihood of engaging in moral hazard behavior on a scale from 0 to 100% following each scenario.

Results

Moral hazard. Since each participant responded to five different moral hazard scenarios, we first converted our data to the long format so that we account for the variance associated with the nested design; this resulted in a total of 2,460 observations. We ran a mixed-effect multilevel regression analysis at the participant level and also included a fixed effect of each moral hazard scenario. In support of our hypothesis, we found that dominance positively predicted moral hazard behavior ($b = 4.08$, $SE = 1.00$, $p < .001$, Model 5, Table S4). There was no relationship with prestige ($b = -.13$, $SE = 1.05$, $p = .90$, Model 5, Table S4).

Table S4. Study S2 regression results using random coefficient modeling

	Moral Hazard				
	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	39.33*** (2.07)	33.59*** (2.89)	41.65*** (4.45)	32.86*** (5.94)	32.34*** (5.90)
Controls					
Gender ^a			-1.11 (1.64)	-1.41 (1.71)	-.51 (1.70)
Age			-.17* (.06)	-.12 (.07)	-.15* (.07)
Scenario Fixed Effects	Yes	Yes	Yes	Yes	Yes
Independent Variables					
Dominance		5.29*** (.66)	5.00*** (.68)		4.08*** (1.00)
Prestige		.43 (.78)	.57 (.78)		-.13 (1.05)
Machiavellianism				6.15*** (1.25)	4.53*** (1.32)
Narcissism				.02 (1.56)	-2.14 (1.68)
Empathy				-4.30** (1.38)	-3.64** (1.37)
Extraversion				2.73* (1.32)	1.19 (1.36)
Agreeableness				-2.71 (1.53)	-4.39** (1.57)
Conscientiousness				-1.38 (1.25)	-1.64 (1.28)
Negative Emotionality				.63 (1.07)	.03 (1.08)
Open-Mindedness				2.21* (1.03)	1.69 (1.04)
AIC	23649.3	23589.2	23586.7	23568.3	23551.8
BIC	23730.6	23682.1	23691.2	23707.7	23702.9
Log Likelihood	-11810.7	-11778.6	-11775.3	-11760.1	-11749.9

N = 2460; * $p < .05$, ** $p < .01$, *** $p < .001$. SEs are shown in parentheses; a: 1 = male, 2 = female.

Discussion

Study S2 replicated Studies 1a and 2a by demonstrating dominance predicted moral hazard decision-making while accounting for several other well-known explanations of selfish decision-making.

Study S3

Study S3 further extends our findings from Study S2 by considering two additional factors that may impact the independent effect of dominance in predicting moral hazard decision-making. As highlighted in the manuscript, previous empirical research suggests a relationship between sense of power and self-interested behavior as a result of an increased focus on rewards and the willingness to pursue personal interests even at the expense of others (Anderson et al., 2012; Gruenfeld et al., 2008; Keltner et al., 2003; Pitesa & Thau, 2013). Moreover, heightened feelings of self-concern should also be related to self-interested behavior. Therefore, we account for these alternative explanations to demonstrate the incremental effect of dominance in predicting moral hazard behavior (Bernerth & Aguinis, 2016).

Method

Sample and procedure. We pre-registered the sample size, exclusion criteria, hypotheses, and analyses in advance of data collection (<https://aspredicted.org/8sz37.pdf>). As per the pre-registration, the power analysis suggested a minimum sample size of 409 for 80% power. To account for participants who might be dropped from the analysis, we preregistered and recruited 450 U.S. participants via Amazon Mechanical Turk (MTurk). A total of 427 participants completed the study, of which none were dropped for having a duplicate IP address or non-U.S. IP addresses, another 20 were dropped for using automatic form fillers leaving a final sample of 398 participants (49.75% female; $M_{age} = 39.68$ y, $SD_{age} = 11.75$).

Participants first reported their hierarchical orientation by responding to the dominance-prestige scale, followed by sense of power and self-concern items. Participants were then randomly assigned to six of the same 12 moral hazards used in Study S2. After reading each

scenario, participants indicate how likely they would be to engage in each moral hazard behavior.

Measures

Dominance and prestige. We used the same 17-item scale from previous studies to measure dominance and prestige ($a_{prestige} = .87$ and $a_{dominance} = .89$).

Sense of Power. Participants indicated their agreement with an eight-item scale; 1 = “disagree strongly” to 7 = “agree strongly” (Anderson et al., 2012). Items included “I can get others to do what I want” and “I think I have a great deal of power” ($a = .83$).

Self-Concern. Participants indicated their agreement with a three-item scale; 1 = “disagree strongly” to 7 = “agree strongly” (De Dreu & Nauta, 2009). An example item, “I am concerned about my own needs and interests.” ($a = .76$).

Moral hazard. Participants reported their likelihood of engaging in moral hazard behavior on a scale from 0 to 100% following each scenario.

Results

Moral hazard. Since each participant responded to six different moral hazard scenarios, we first converted our data to the long format so that we accounted for the variance associated with the nested design; this resulted in a total of 2,376 observations. We ran a mixed-effect multilevel regression analysis at the participant level and also included a fixed effect of each moral hazard scenario. In support of our hypothesis, we found that dominance positively predicted moral hazard behavior ($b = 7.59$, $SE = .66$, $p < .001$, Model 5, Table S5).

Table S5. Study S3 regression results using random coefficient modeling

	Moral Hazard Decision-Making				
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model 4</i>	<i>Model 5</i>
Constant	41.462*** (2.181)	31.140*** (2.930)	39.707*** (4.761)	45.820*** (9.320)	40.821*** (8.469)
<i>Controls</i>					
Gender ^a			-1.333 (1.709)	-4.969* (1.964)	-1.657 (1.728)
Age			-.167* (.072)	-.238** (.083)	-.165* (.072)
<i>Independent Variables</i>					
Dominance		7.837*** (.650)	7.581*** (.662)		7.592*** (.663)
Prestige		1.038 (.852)	1.154 (.849)		1.994 (1.183)
Sense of Power				.961 (1.010)	-1.447 (1.182)
Self-Concern				1.387 (1.258)	.686 (1.103)
Scenario Fixed Effects	Included	Included	Included	Included	Included
<i>N</i>	2,376	2,376	2,376	2,376	2,376
<i>AIC</i>	22889.8	22760.9	22759.3	22875.4	22757.2
<i>BIC</i>	22970.7	22853.3	22863.2	22979.4	22872.6
Log Likelihood	-11430.9	-11364.5	-11361.6	-11419.7	-11358.6

* $p < .05$, ** $p < .01$, *** $p < .001$. SEs are shown in parentheses; a: 1 = male, 2 = female.

Discussion

Study S3 provides additional evidence for dominance as a unique predictor of moral hazard decision-making while accounting for well-known explanations of selfish decision-making.

Study S4

The objective of this study was to provide causal evidence of the role of dominance (vs. prestige) in predicting moral hazard behavior by manipulating the two hierarchical orientations.

Method

Sample and procedure. We pre-registered the sample size, exclusion criteria, hypotheses, and analyses in advance of the data collection (<https://aspredicted.org/w2ut9.pdf>). As per the pre-registration, the power analysis suggested a minimum sample size of 506 for 80% power. To account for participants who might be dropped from the analysis, we preregistered and recruited 550 U.S. participants via Prolific Academic (now known as simply “Prolific”). A total of 551 participants completed the study. In line with our pre-registered criteria, we excluded 80 participants for failing an attention check question, six for suspected geo locations or IP address and one for having duplicate IP addresses. The final sample consisted of 464 participants, ($N_{Dominance} = 234$; $N_{Prestige} = 230$; 50% female; $M_{age} = 35.35$, $SD_{age} = 13.10$)

This study utilized a two condition between-subjects design: Hierarchical Orientation: Dominance [N= 235] vs. Prestige [N= 233]. We randomly assigned participants to either a dominance or prestige condition. In order to manipulate dominance and prestige, all participants were first asked to complete a leadership survey. The survey consisted of five items and asked participants to provide four words that either described their style of leadership or the qualities they associate with a leader to determine their leadership style. Independent of their responses, they received feedback that their leadership style exemplified either a dominance or prestige orientation. In the dominance condition, participants read:

As a leader, you would be assertive and direct in conveying your opinions and thoughts with other group members. Such leaders are known to take initiative and seize every opportunity to take control of the situation. It is extremely important for you as a leader to be individually successful and known for your accomplishments. In short, as a leader,

you would be highly influential when you are dominant, assertive, authoritative, and controlling of your subordinates.

In the prestige condition, participants read:

As a leader, you care that you are valued for your skill and expertise. You are keen to offer guidance and advice to others, and as a result, you are granted respect and deference by the team members you supervise. It is extremely important for you as a leader to share your knowledge in order to be respected, admired, and held in high esteem. In short, as a leader, you would be highly influential when you engage in actions that bring out your expertise and cause you to be respected, admired, considered a role-model, and held in deference by your subordinates.

Following this, participants were asked to imagine that they were a managing director at a hedge fund and that a number of employees reported to them. They then responded to the manipulation check items by completing the dominance-prestige scale and then responded to the same moral hazard scenario as in Study S1, with U.S. dollars rather than pounds. Again, participants had full authority and discretion to invest their client's money. This investment had a 50% success likelihood and participants would not be penalized if their investment failed. Instead, they stood to earn a 20% commission if the investment was successful. To ensure participants read the investment scenario carefully, we included an attention check question by asking them to indicate the success likelihood of the investment decision using a 0–100% scale.

Measures

Dominance and prestige. We used the same 17-item dominance and prestige scale as a manipulation check ($a_{prestige} = .90$ and $a_{dominance} = .96$).

Moral hazard. We used the same moral hazard measure as in Study S1. The reported amount was divided by 1,000 and hence should be interpreted in thousands of dollars.

Results

Manipulation check. Supporting the efficacy of our manipulation, participants in the dominance condition rated themselves higher on dominance ($M = 3.57$, $SD = 1.72$) than those in

the prestige condition ($M = 2.93$, $SD = 1.49$), $F(1, 462) = 18.54$, $p < .001$, $d = .40$. Surprisingly, our prestige manipulation was not completely effective. While participants in the prestige condition rated themselves higher on prestige ($M = 5.83$, $SD = .86$) than those in the dominance condition ($M = 5.68$, $SD = .93$), the difference was not statistically significant, $F(1, 462) = 2.95$, $p = .086$, $d = .16$.

Moral hazard. Consistent with our hypothesis, participants in the dominance condition engaged in greater moral hazard behavior by investing more of their client's money ($M = 511.79K$, $SD = 307.39K$) than those in the prestige condition ($M = 438.74K$, $SD = 323.72K$), $F(1, 462) = 5.21$, $p = .013$, $d = .23$.

Discussion

Study S4 provided causal evidence in support of our hypothesis. By manipulating dominance and prestige, we found that the former (vs. the latter) leads to a greater moral hazard behavior.

Study S5

This study manipulated dominance and prestige to offer causal evidence that dominance (vs. prestige) predicts a greater preference for outcome accountability over process accountability.

Method

Sample and procedure. We pre-registered the sample size, exclusion criteria, hypotheses, and analyses in advance of the data collection (<https://aspredicted.org/bk92e.pdf>). As per the pre-registration, the power analysis suggested a minimum sample size of 506 for 80% power. To account for participants who might be dropped from the analysis, we preregistered and recruited 550 U.S. participants via Prolific. A total of 547 participants completed the study; there were no duplicate entries and manual inspection of IP addresses indicated six IP addresses were not from the U.S. The final sample consisted of 541 participants, (50% female; $M_{age} = 34.90$, $SD_{age} = 12.26$).

This study utilized a two condition between-subjects design: Hierarchical Orientation: Dominance [N= 271] vs. Prestige [N= 270]. The study design and manipulations were identical to those used in the previous study. Participants were asked to imagine that they were a managing director at a hedge fund and that a number of employees reported to them. They then responded to the manipulation check items and indicated their accountability preference.

Measures

Dominance and prestige. We used the same 17-item scale as a manipulation check ($\alpha_{prestige} = .91$ and $\alpha_{dominance} = .96$).

Accountability. We used the same three-item scale as in Study 1b ($\alpha = .73$).

Results

Manipulation check. A one-way analysis of variance (ANOVA) revealed that participants in the dominance condition rated themselves higher on dominance ($M = 3.93$, $SD = 1.62$) than participants in the prestige condition ($M = 2.88$, $SD = 1.51$), $F(1, 539) = 60.74$, $p < .001$, $d = .67$. Conversely, participants in the prestige condition rated themselves higher on prestige ($M = 5.83$, $SD = .86$) than participants in the dominance condition ($M = 5.60$, $SD = .99$), $F(1, 539) = 8.10$, $p = .005$, $d = .25$. Thus, our manipulation was supported.

Accountability. Similar analysis showed that participants in the dominance condition indicated a greater preference for outcome accountability ($M = 5.84$, $SD = 1.57$) than participants in the prestige condition ($M = 5.21$, $SD = 1.46$), $F(1, 539) = 23.09$, $p < .001$, $d = .41$, replicating our findings from Study 1b.

Discussion

Study S5 provided causal evidence in support of our hypothesis. By manipulating dominance and prestige, we found that the former (vs. the latter) leads to a greater preference for outcome accountability over process accountability.

Study S6

Having demonstrated both correlational and causally the main effect of dominance on moral hazard behavior and outcome accountability, in this study, we wanted to test our other key proposition: Authority/discretion and dominance jointly predict moral-hazard behavior. Thus, this study's objective was to substantiate our claim empirically that formal power or authority is not sufficient to explain moral hazard decision-making. Rather dominance coupled with authority or discretion leads to greater moral hazard behaviors. We therefore manipulated both (a) the extent to which participants had authority and discretion in making an investment decision and (b) their hierarchical orientation.

Method

Sample and procedure. Since this study involved a 2 x 2 design, we decided to double our sample size in comparison to Studies S4 and S5 by aiming to recruit 1,100 U.S. participants via Prolific. A total of 1,098 participants completed the study. We excluded 23 participants for failing the attention check question, 22 for having duplicate entries based on their IP addresses, and five for having IP addresses outside of the U.S., so that the final sample consisted of 1,048 participants (53% female; $M_{age} = 36.19$, $SD_{age} = 13.95$). A sensitivity analysis revealed that this sample size, would have detected a minimum effect size of $f = 0.09$ with 80% power.

This study utilized a 2 (Hierarchical Orientation: Dominance [$N = 520$] vs. Prestige [$N = 528$]) x 2 (Discretion: Yes [$N = 515$] vs. No [$N = 533$]) between-subjects study design. Participants learned that they were participating in the second part of a two-part study. For the second part of the study, participants had the opportunity to invest bonus payments earned by subjects in the first part of the study. Importantly, it was stated that subjects from the first part of the study made the decision to have their bonus payment invested knowing that they could earn a

larger bonus or potentially lose their bonus. In reality, there was no first round of the study and participants were not investing real money. Similar to Studies S4 and S5, we first manipulated dominance or prestige by asking participants to complete a bogus leadership questionnaire. Next, we manipulated the level of discretion participants had in making their investment decision. In the no discretion condition, participants were informed that they did not have complete authority or full discretion. Instead, their investment decision would be sent to the participant from the first round of the study, who would either authorize or reject the investment decision. Conversely, participants in the full discretion condition were told they had complete authority and full discretion when making their investment decision. Their decision would be final and would not be sent to the participant from the first part of the study for review.

Next, participants were informed that they would have the opportunity to invest \$10 worth of bonuses earned by four previous participants. The moral hazard scenario was similar to Studies S4 and S5, where the investment had a 50% success likelihood and participants would not be penalized if their investment failed. Rather, they stood to earn a 20% commission if the investment was successful. To ensure participants understood the degree to which they had authority, we included an attention check question asking them to indicate whether they had full authority and discretion when making their investment (“yes,” “no,” or “I don’t know”).

Measures

Dominance and prestige. We used the same 17-item dominance-prestige scale as a manipulation check ($\alpha_{prestige} = .93$ and $\alpha_{dominance} = .97$).

Moral hazard. The amount of bonus invested (0 to \$10 in increments of cents) by participants indicated the degree of their moral hazard behavior.

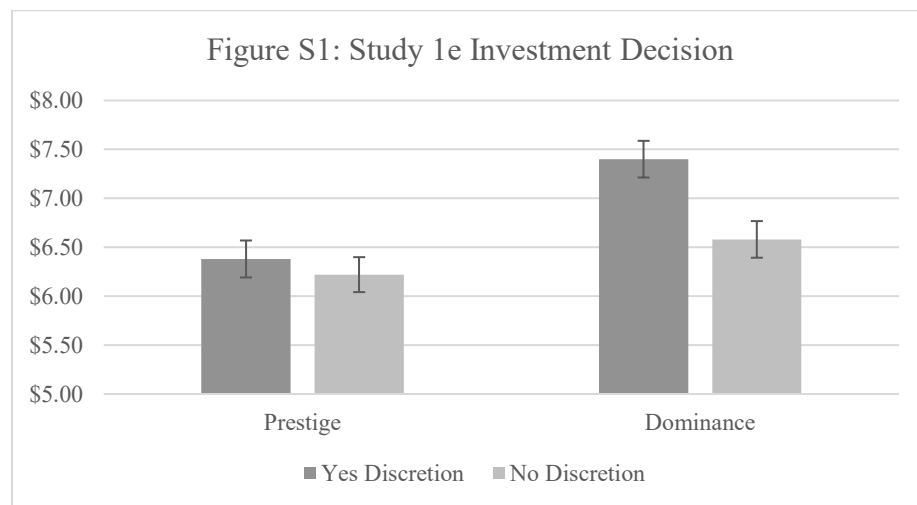
Results

Manipulation check. We performed a 2 x 2 ANOVA on the dominance and prestige ratings, respectively. For all the analysis in this study, we coded dominance as 1, prestige as 0, yes discretion as 1 and no discretion as 0. The resulting analysis for dominance indicated a main effect of the hierarchical manipulation, $F(1, 1,044) = 601.82, p < .001, \eta^2_p = .37$, no main effect of the discretion condition, $F(1, 1,044) = .50, p = .48, \eta^2_p < .001$, and also no significant interaction of the two, $F(1, 1,044) = 2.88, p = .09, \eta^2_p = .003$. Participants in the dominance condition reported greater dominance ($M = 4.98, SD = 1.62$) than participants in the prestige condition ($M = 2.68, SD = 1.42$), $F(1, 1,046) = 599.86, p < .001, d = 1.51$. Overall, the dominance manipulation was effective. Similar analysis for prestige ratings revealed a main effect of the hierarchal manipulation, $F(1, 1,044) = 178.52, p < .001, \eta^2_p = .15$, no main effect of the discretion condition, $F(1, 1,044) = .01, p = .90, \eta^2_p < .001$, and also no interaction of the two conditions, $F(1, 1,044) = .45, p = .50, \eta^2_p < .001$. There were significantly higher prestige ratings in the prestige condition ($M = 6.06, SD = .78$) than in the dominance condition ($M = 5.20, SD = 1.24$), $F(1, 1046) = 178.52, p < .001, d = .83$. Thus, the prestige manipulation was successful.

Moral hazard. To test whether the difference between the dominance and prestige orientations' effects on moral hazard decision-making was conditional on discretion, we subjected the amount invested to a 2 x 2 ANOVA. This resulted in a significant main effect of both hierarchal manipulation, $F(1, 1,044) = 13.80, p < .001, \eta^2_p = .01$, and the discretion condition, $F(1, 1,044) = 6.93, p = .01, \eta^2_p = .01$. More importantly, the two main effects were qualified by a marginally significant interaction, $F(1, 1,044) = 3.13, p = .077, \eta^2_p = .003$.

Planned contrast analyses revealed no difference in the amount invested between the dominance ($M = 6.58, SD = 3.04$) and prestige ($M = 6.22, SD = 2.93$) conditions without

discretion, $F(1, 1,044) = 1.93, p = .17, d = .12$. This makes sense as the effect of dominance should not be pronounced when the individual lacks influence or authority. In contrast, dominance ($M = 7.40, SD = 3.00$) resulted in greater moral hazard behavior than prestige ($M = 6.38, SD = 3.04$) when participants had complete authority, $F(1, 1,044) = 14.78, p < .001, d = .34$. Additionally, individuals assigned to dominance engaged in greater moral hazard behaviors in the discretion condition than their counterparts in the no discretion condition, $F(1, 1,044) = 9.61, p = .002, d = .27$, or participants assigned to the prestige condition without discretion, $F(1, 1,044) = 20.18, p < .001, d = .40$ (see Figure S1). Taken together, these results suggest that dominance leads to moral hazard behaviors when decision-makers enjoy complete authority.



Discussion

In demonstrating that simply having authority is not sufficient for moral hazard decision-making, Study S6 explains why not all individuals with formal leadership status or authority engage in such behaviors. Rather, such decisions are most likely when decision-makers are dominant (vs. prestigious) and have complete discretion over their decision. Importantly, this study also replicated our results from Studies S4 and S5. We also observed that individuals in the no discretion condition invested the same amount irrespective of dominance or prestige

conditions. This finding is consistent with the dual strategies framework such that dominance is a way to achieve and maintain higher social rank and its effects should be more pronounced when individuals can exert power or coercion. When such individuals lack authority, one may not observe the effects of dominance.

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