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Kindred spirits: Cognitive frame similarity and good faith provisions in strategic alliance contracts

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Abstract

Research Summary: An intriguing yet underexamined phenomenon in strategic alliance contracts is the use of good faith provisions. These provisions appeal to parties' integrity and fair dealing but are often ambiguous, and their enforcement in court is unpredictable. Adopting a sociocognitive perspective, we predict a positive relationship between the similarity of partners' organizational-level cognitive frames and the number of good faith provisions in alliance contracts. We further posit that technological uncertainty strengthens this relationship, whereas each alliance partner's cumulative contracting experience weakens it. We also expect a more positive relationship in instances of "genuine" good faith, which serves as a substitute for an explicit clause, compared with "guarded" good faith, which supplements an explicit clause. Our analysis of 1225 strategic alliance contracts from the biopharmaceutical industry supports our arguments.

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Managerial Summary: Managers negotiating strategic alliances often face a dilemma: they negotiate detailed contracts to reduce legal risk but limit flexibility or opt for less codification, saving time and retaining flexibility but increasing legal risk. Good faith provisions offer a potential solution because they are flexible yet legally enforceable, but they require a shared interpretation of the relevant contingency, raising questions about when managers find this approach reasonable. We analyzed 1225 biopharmaceutical alliance contracts and found that such provisions are more common when alliance partners have similar cognitive frames, as evidenced by similar "About Us" web pages. This effect is stronger under conditions of greater technological uncertainty but weakens with more alliance experience. Our study elucidates the use of good faith provisions to aid managers in navigating alliance negotiations efficiently.

KEYWORDS

cognitive frame similarity, contract design, good faith, interorganizational governance, social cognition, strategic alliances

1 | INTRODUCTION

An intriguing aspect of strategic alliance contracts is the frequent use of good faith provisions—that is, clauses rooted in, and explicitly referring to, the legally enforceable principle of "honesty in fact and the observance of reasonable commercial standards of fair dealing" (United States Uniform Commercial Code, § 1-201(20)). Good faith provisions are interesting because, while they may allow parties to sign a contract without getting into too much detail and to retain flexibility to respond to future contingencies, they also introduce interpretive uncertainty, with potentially far-reaching and costly consequences. For example, the 2005 agreement between SIGA Technologies and PharmAthene boasted 21 good faith provisions, including the following:

> SIGA and PharmAthene will negotiate *in good faith* with the intention of executing a definitive License Agreement in accordance with the terms set forth [...]. (emphasis added; SIGA Technologies, 2006)

The contested interpretation of this good faith provision was the root cause of the protracted legal battle between the two firms from 2006 to 2015 (SIGA Technologies, Inc. v. PharmAthene,

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Inc, 2015). Ultimately, this long and costly dispute and a $217 million legal damage payment caused SIGA to file for bankruptcy in 2014 (Richter, 2016; SIGA Technologies, 2017).

Given the ubiquity and inherent strategic tradeoffs of good faith provisions, it is puzzling that strategic management and governance research has not yet systematically examined them in the context of strategic alliances. Not only do we lack conceptualization, but we also do not know w*hen and why strategic alliance partners use good faith provisions in their alliance contracts*. In fact, the literature provides insufficient answers to this question. For example, the relational governance literature emphasizes the importance of trust and social expectations in maintaining a positive exchange relationship (Faems et al., 2008; Poppo & Zenger, 2002; Zaheer & Venkatraman, 1995). Even if the principle of good faith is partially based on relational governance, it goes beyond this principle, as it is contractually binding and therefore enforceable in court. Alternatively, it would be plausible to conceptualize good faith provisions as formal contractual contingency plans to safeguard the partnership against future eventualities (Argyres et al., 2007; Mayer & Bercovitz, 2008). However, while good faith provisions are enforceable in principle, their safeguarding function is limited, and they may also leave too much room for interpretation to provide explicit guidance on the actions required in specific situations. As such, good faith provisions seem to represent an intermediate option on the continuum between relational governance and contractual governance. Overall, in light of their unique characteristics, it appears necessary to adapt and extend extant theory to better explain when and why alliance partners employ good faith provisions.

We accomplish this by adopting a sociocognitive perspective (Pfarrer et al., 2019), positing that contracting serves as both a safeguard against exchange hazards (Lioukas & Reuer, 2020) and a process in which partners jointly engage in sensemaking and socially construct their relationship's future (Ring & Van de Ven, 1994; Vlaar et al., 2006). Integrating this notion with research on interorganizational similarity (Abdi & Aulakh, 2017; Gulati & Sytch, 2008; Robson et al., 2008), we introduce the concept of cognitive frame similarity between alliance partners as a central determinant of the use of good faith provisions in an alliance contract. Cognitive frame similarity denotes the degree to which two organizations resemble each other in terms of their generalized organizational-level schemas of interpretation—that is, shared values, beliefs, and cognitive orientations (Cornelissen & Werner, 2014; Kaplan, 2011). Our key argument is that cognitive frame similarity provides a meaningful social cue or "mental shortcut," such that the greater strategic alliance partners' cognitive frame similarity is, the more readily they will anticipate that the two organizations will easily align their specific framing of any particular contingency in the future (see also Weber & Mayer, 2014). In turn, they will prefer good faith provisions in the interest of efficiency and reduced contracting costs, despite their inherent risks and limitations.

Extending this sociocognitive perspective, we also address three boundary conditions regarding the impact of cognitive frame similarity on the use of good faith provisions. First, we suggest that technological uncertainty strengthens the main relationship because technological uncertainty increases negotiators' recourse to mental shortcuts when interpreting contingencies (Weber & Mayer, 2014). Second, we propose that each firm's alliance experience weakens the influence of cognitive frame similarity, as extensive participation in alliances can lead to fixation on previously utilized arrangements, consequently reducing decision-makers' reliance on mental shortcuts in interpreting the focal contractual situation (Mayer & Argyres, 2004; Weber, 2017). Finally, we argue that the sociocognitive mechanisms we propose are more pronounced for "genuine" good faith provisions than for "guarded" good faith provisions. We categorize good faith provisions as genuine if they do not specify an arrangement for when partners

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fail to agree in good faith, as opposed to guarded good faith provisions that include explicit contingency plans serving as fallback options should good faith negotiations fail. To test our hypotheses, we develop a dictionary-based measure of cognitive frame similarity using alliance partners' "About Us" web pages and substantiate our arguments by analyzing a unique dataset comprising 1225 contracts of R&D-focused strategic alliances in the biopharmaceutical industry.

Our research makes three important contributions to the scholarly literature. First, we contribute to interorganizational governance research by highlighting good faith provisions as an undertheorized yet central element in strategic alliance contracts. In particular, we provide a conceptual foundation for the study of good faith provisions, defining how they relate to, and differ from, previously studied relational and contractual governance mechanisms (Cao & Lumineau, 2015; Schepker et al., 2014); we offer contextualized explanations for when and why they are used in strategic alliance contracts; and we introduce conceptual nuance by distinguishing genuine from guarded good faith provisions. Second, we enrich the sociocognitive perspective on strategic alliances. While related research has highlighted the importance of situational cognitive frames and frame alignment in strategic alliances *at the time when specific contingencies emerge* (Weber & Mayer, 2014), we focus on broad *organizational-level* cognitive frames already existing at the onset of contract negotiations and how the similarity of such organizational-level frames affects partners' *anticipation* of the future need for interpretive alignment concerning contingencies. In doing so, we also extend prior research on the implications of organizational similarity for strategic alliances (Abdi & Aulakh, 2017; Lavie et al., 2012; Robson et al., 2008). Finally, we make a methodological contribution by providing a valid and easily applicable measure of cognitive frame similarity—a construct likely to impact other strategic outcomes beyond strategic alliances, including mergers and acquisitions and buyer–supplier relationships.

2 | GOOD FAITH PROVISIONS IN ALLIANCE CONTRACTS

Good faith, one of the oldest and most established concepts in law (Beatson & Friedmann, 1997), denotes a universal, legally enforceable principle of honesty and fair dealing in contractual relationships (Burton, 1980). This notion dates back to Roman law and is acknowledged in most legal systems (Zimmermann & Whittaker, 2000). Legal scholars have extensively debated the meaning of good faith (Campbell, 2014) and agree that it presupposes a degree of goodwill and integrity, as well as a duty and commitment to act in the interests of a partnership (Rakoff, 2007). Importantly, although a general duty of good faith (prohibiting, for example, overt deception) is implicit in contracts under US law and in many other jurisdictions, such as Germany, France, and China (Markovits, 2014), parties may also include provisions that expressly codify additional good faith requirements for specific contingencies to further expand the parties' commitment and obligation to undertake constructive resolution efforts in these situations. Consequently, if a party behaves opportunistically and willfully inflicts harm on the other party with respect to a specific contingency, it may be liable for damage (Burton, 1980).

The study of good faith provisions holds significant importance in alliance governance research for at least two reasons. First, good faith provisions occupy a theoretically unique position on the governance spectrum between relational governance and contractual governance (e.g., Poppo & Zenger, 2002; Zaheer & Venkatraman, 1995). Whereas relational governance is

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largely founded on trust, which typically implies a willingness to accept vulnerabilities and can be withdrawn at any time (Schoorman et al., 2007), good faith provisions entail a legal obligation anchored in expectations of integrity and fair dealing, distinguishing them from trust. Codified in contracts, good faith provisions also remain in effect for the duration of the contractual agreement (MacMahon, 2015). However, although good faith provisions provide a level of legal enforceability, they lack the clarity and specificity of other contractual safeguards and explicit provisions that precisely outline partner expectations (Gergen, 1992). Thus, good faith provisions have legal validity yet are susceptible to interpretation.

Second, as highlighted in the legal literature and the numerous expert interviews, we conducted,[1] good faith provisions are a double-edged sword. On the one hand, good faith provisions can free negotiators from the burden and costs of needing to explicitly outline contingencies upfront; moreover, they are highly flexible and manifest a commitment to the partnership. For example, one corporate lawyer we interviewed noted that good faith provisions enable partners to craft responses to contingencies at times when sufficient information becomes available, arguing that "explicit good faith provisions are particularly useful for guiding future arrangements in collaborations where precise details cannot be predetermined." An industry expert with years of experience negotiating alliances for biopharmaceutical firms described these provisions as providing a form of "emotional assurance that is essential to maintaining a collaborative negotiating environment." That is, they constitute a mutually agreed upon and legally binding interest and obligation to approach a particular contingency with fairness and integrity. At minimum, they explicitly require partners to make reasonable efforts to develop solutions to issues that are not explicitly codified in the contract on the basis of honest intent and fair dealing.

On the other hand, good faith provisions afford substantial discretion in interpreting partners' rights and responsibilities, thereby creating the potential for costly follow-up disagreements (Gillette, 1981; MacMahon, 2015). Indeed, legal practitioners note that it "can be difficult to know exactly what is meant by [good faith] in any given situation" (Parker et al., 2016, p. 3). During our interviews, a lawyer specializing in biopharmaceutical contracts cautioned against relying on good faith provisions "[to defer] critical decisions to the future because negotiations become more complicated in pressured situations, which can jeopardize the project's success." Another seasoned legal advisor pointed out the "danger of good faith concealing unresolved issues or ambiguities." In other words, the interpretive uncertainty of good faith provisions can give rise to significant and costly disputes, posing fundamental risks to the partnership and to the fulfillment of expectations that are not explicitly codified, particularly when unforeseen contingencies arise.

Overall, good faith provisions are theoretically meaningful and practically consequential, involving idiosyncratic trade-offs when determining the extent to which alliance partners should incorporate good faith provisions into their contractual arrangements. Good faith provisions offer flexible and legally enforceable means to formalize partners' goodwill and their shared intention to work together constructively, but they expose the partners to risks because expectations regarding good faith may prove to be misaligned. This trade-off raises the question

[1]These interviews, involving 46 industry experts and specialized lawyers, lasted 30–90 minutes each and involved open-ended questions about general aspects of alliance contracts as well as five interviews dedicated to good faith provisions. Initial interview participants were contacted through partnering conferences in the biopharmaceutical industry and personal contacts. Subsequent participants were identified through referrals. We do not rely on these interviews as systematic evidence, but rather use them to illustrate and ground our conceptualization of good faith provisions, including clarifying their legal and practical meaning and offering exemplary use cases.

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of the extent to which and the circumstances under which strategic alliance negotiators include good faith provisions in their alliance contracts. To address this question, we adopt a sociocognitive perspective, focusing on the concept of cognitive frame similarity.

3 | GOOD FAITH PROVISIONS AS A FUNCTION OF COGNITIVE FRAME SIMILARITY

Studies on interorganizational relationships have long emphasized the importance of organizational similarity for governance choices. Parkhe (1998), for example, argues that the "greater the similarity of societal and corporate cultures [is], the greater may be the [...] familiarity with each other's modes of thinking and behaving, hence the greater the comfort level and the lower the learning cost and time [associated with building a relationship]" (p. 432). Relatedly, in their meta-analysis, Meier et al. (2016) find that organizational similarity in routines, values, and goals promotes trust in strategic alliances, arguably because such similarity engenders a shared frame of reference and mutual understanding. Similarly, Robson et al. (2008, p. 652) suggest that shared expectations and assumptions among alliance partners "about each other's prerogatives and obligations" (citing Ring & Van de Ven, 1994, p. 100) facilitate joint sensemaking. Additionally, Gulati and Sytch (2008) contend that the degree to which partners identify with each other depends on their perceived similarity.

Recognizing the importance of interorganizational similarity for governance choices, we focus on a form of interorganizational similarity that we posit to be closely related to the interpretive uncertainty inherent in good faith provisions and therefore expected to influence their frequency in alliance contracts: similarity in cognitive frames. Cognitive frames are schemas of interpretation (Barr & Huff, 1997) or "knowledge structures" (Walsh, 1995, p. 281) that are shared among organizational members and guide their attention, information processing, decision-making, and actions (Cornelissen & Werner, 2014; Kaplan, 2011; Knudsen, 2000). They include the interrelated shared values, beliefs, and broader taken-for-granted and often subconscious cognitive orientations that provide the cognitive lenses through which an organization's members view and make sense of organizational issues.

In contrast to more specialized theoretical domains, such as organizational identity (Ashforth & Mael, 1989; Kammerlander et al., 2018) or organizational culture (Harris, 1994; Pettigrew, 1979), our conceptualization of cognitive frames is rooted in a broader understanding of managerial and organizational cognition (Hodgkinson & Healey, 2008; Martela, 2023). We conceive of organizational members developing collectively shared "mental templates" (Walsh, 1995, p. 281) or "thought worlds" (Dougherty, 1992, p. 179) through interactions, efforts to rationalize their actions (Weick et al., 2005), and organizational socialization (van Maanen & Schein, 1979). Consequently, our conceptualization of cognitive frame similarity has a wider scope and greater temporal stability than Weber and Mayer's (2014) related notion of "frame alignment," which refers to the extent to which the partners in an ongoing alliance harmonize their interpretations of a specific contingency when it materializes within an ongoing alliance. Specifically, we focus on the broader similarity of partnering organizations' *overall* cognitive frames at the beginning of alliance negotiations.

We argue that cognitive frame similarity amplifies partners' tendencies to use good faith provisions through a mechanism comprising three key elements: their negotiators' cognitive processes, their interactions during negotiations, and their shared expectations of how they would jointly address future contingencies. First, we assume that the organizations'

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representatives who negotiate and sign an alliance contract bring—largely subconsciously—their organizations' respective frames to the negotiation table (Weber & Coff, 2024). In this regard, we argue that negotiators' sensemaking processes reflect the overarching cognitive frames of their respective organizations. Given the pivotal importance of strategic alliances, firms typically select negotiators with extensive working experience in the organization. In our sample of contracts, for example, the average tenure of the negotiators—usually three to seven people on each side—within their organizations was 8 years.[2] Thus, the negotiators had been extensively exposed to organizational-level cognitive frames and had likely internalized them as part of their organizational socialization, at least to a substantial degree. Thus, it is reasonable to expect organizational-level frames to affect the sociocognitive dynamics of alliance negotiations through negotiators' cognition.

Second, we build on Macneil's (1974) sociocognitive conceptualization of contracting to assume that negotiation partners become aware of their respective frames through iterative and interactive sensemaking processes during negotiation. Specifically, we stipulate that partners continuously construe their individual and joint futures by projecting their expectations into the future and then translating them back into the contract. In doing so, they not only share their interpretations of the contractual situation but also provide cues about their general sensemaking processes and structures (Das & Kumar, 2010; Ring & Van de Ven, 1994; Vlaar et al., 2006). This process, in turn, leads them to develop a—primarily subconscious—sense of their similarity in terms of their organizations' overall values, beliefs, and broader cognitive orientations—in other words, a sense of their cognitive frame similarity.

Finally, we argue that a higher degree of similarity in cognitive frames fosters expectations of shared interpretations and a mutual understanding of future contingencies, thereby increasing the incorporation of good faith provisions in alliance contracts. In this context, Weber and Mayer (2014) note that as partners' understandings and interpretations of a specific contingency become more aligned—essentially, as they frame the contingency more similarly—the necessity for those partners to engage in the costly, time-intensive, and politically loaded processes of "frame alignment" diminishes (p. 349). This process involves strategic efforts to influence each other in developing a joint understanding and interpretation of the contingency, which is crucial for effectively addressing it. Building on this reasoning, we posit that as partners perceive greater similarity in their cognitive frames, they anticipate their interpretations of situations—both in general and of specific contingencies—to align more closely in the future. In other words, negotiation partners rely on their perception of cognitive frame similarity as a mental "shortcut" (Fiske & Taylor, 2017, p. 188) to alleviate interpretive uncertainty in complex situations. This perception of greater cognitive frame similarity also leads negotiation partners to anticipate fewer conflicts and to have greater confidence in their joint ability to swiftly and effectively devise adequate responses to future contingencies in good faith without requiring deliberate and prolonged frame alignment efforts.

Hence, we conclude that partners with greater cognitive frame similarity perceive that there is less of a need to develop explicit contractual remedies for contingencies. In fact, such partners perceive good faith provisions as beneficial because they contractually enshrine the partners' commitment to and confidence in their ability to constructively address specified contingencies while requiring less ex ante negotiation and offering more ex post flexibility than explicit

[2]We collected individual-level data on contract negotiators based on the names of individuals listed as contract signatories. We obtained these data through social networks and professional sites such as LinkedIn, Xing, Facebook, and Bloomberg.

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contractual provisions do. Overall, by synthesizing the three elements, we formally deduce the following:

Hypothesis 1. Alliance partners' cognitive frame similarity is positively related to the number of good faith provisions in their alliance contract.

4 | BOUNDARY CONDITIONS RELATED TO COGNITIVE FRAME SIMILARITY

A large body of social cognition research underscores that decision-makers' reliance on mental shortcuts is influenced by two central factors—uncertainty and routinization (Bingham & Eisenhardt, 2011; Feldman & Pentland, 2003; Maitland & Sammartino, 2015; Uygur & Kim, 2016). A primary reason for human reliance on mental shortcuts is to manage uncertainty and novel, unfamiliar situations (Fiske & Taylor, 2017, p. 188). Thus, cognitive frames generally have a greater influence on decision-making in uncertain situations (Nutt, 1998; Tversky & Kahneman, 1981), whereas they play a lesser role when the decision at hand adheres to familiar, standardized scripts or templates (Gioia & Poole, 1984; Walsh, 1995). Accordingly, we contend that negotiators rely more on their perceptions of cognitive frame similarity in situations of heightened uncertainty regarding potential contingencies. Conversely, this reliance diminishes as interpretive processes become more prestructured and standardized through experience. Although we focus primarily on technological uncertainty and general alliance experience as moderators relevant to our context, our arguments could extend to other boundary conditions influencing the impact of mental shortcuts in decision-making. However, we believe that the two factors outlined here effectively illustrate these underlying mechanisms and are particularly pertinent to the context of R&D-focused strategic alliances.

4.1 | The moderating effect of technological uncertainty

Research across various disciplines underscores the pivotal role of uncertainty as a crucial boundary condition shaping sociocognitive processes (Griffin & Grote, 2020). According to Weick (1995), uncertainty leads to the "inability to extrapolate current actions and to foresee their consequences" (pp. 98–99), resulting in a greater need for sensemaking to interpret contingencies (Weber & Mayer, 2014). In particular, social psychologists emphasize that as stimuli become more ambiguous and uncertain, individuals tend to rely more on heuristics or cognitive shortcuts for sensemaking (Mischel, 1977; Weick et al., 2005). According to Randles et al. (2018), this tendency may stem not only from the compensatory role of cognitive shortcuts in resolving informational gaps and reducing cognitive load but also from the comfort provided by familiar schemas and frames in preserving meaning. Organizational research corroborates these observations, indicating that managers frequently resort to learned patterns when making strategic decisions in contexts of high uncertainty (Maitland & Sammartino, 2015; Schwenk, 1984). Pertaining more directly to the focus of our study, prior contracting research suggests that negotiators "cope with uncertainty and their own limited cognitive resources through the use of heuristics or simple rules of thumb" (Bottom, 1998, p. 91).

Similarly, we suggest that technological uncertainty amplifies the impact of cognitive frame similarity on interpretive processes in contract negotiations. Technological uncertainty arises from the unpredictability of future technological developments, which precludes a complete

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understanding of the available response options and their potential impacts on a strategic alliance (Nelson, 1959; Reuer & Devarakonda, 2016). Consequently, this type of uncertainty poses significant challenges, as it burdens alliance partners with the cognitive task of comprehending the contractual situation and devising appropriate contractual provisions (Carson et al., 2006; Tirole, 2009). Importantly, unlike other potentially relevant types of uncertainty, such as partner or task uncertainty, technological uncertainty is not directly related to the actions of the partners involved (Milliken, 1987; Santoro & McGill, 2005). Instead, it is inherently linked to the pace and direction of innovation, which can be erratic and influenced by factors beyond the control of the alliance partners (Dosi, 1982). Thus, technological uncertainty introduces an idiosyncratic boundary condition within innovation-intensive contexts because contingencies are imperfectly known, making it exceedingly taxing to make sense of them and prepare for them contractually (Hanisch, 2024).

Accordingly, we expect technological uncertainty to strengthen the relationship between cognitive frame similarity and the use of good faith provisions. First, as noted above, decision-makers tend to rely more on mental shortcuts in situations of high uncertainty due to limited alternative sources of information (Tversky & Kahneman, 1974). Conversely, when uncertainty is lower and future developments are clearer, there is a reduced need for reliance on social cues, including perceived cognitive frame similarity, as interpretations tend to converge. Second, technological uncertainty inherently increases the likelihood of conflict in R&D collaborations, raising the importance of negotiators' anticipation of developing a shared understanding of the situation and potential responses, as well as reaching an agreement in case of a dispute. Particularly in R&D collaborations, where innovation is paramount, heightened technological uncertainty accentuates the need for partners to align their cognitive frames to interpret and respond effectively to unpredictable developments. Notably, these effects become compounded by the fact that technological uncertainty increases the costs associated with negotiating specific contract clauses ex ante, thereby rendering reliance on cognitive frame similarity—whether conscious or subconscious—even more efficient than in scenarios with lower technological uncertainty. In summary, we expect the incremental impact of cognitive frame similarity on the use of good faith provisions to intensify with increasing levels of technological uncertainty.

Hypothesis 2. The positive relationship between alliance partners' cognitive frame similarity and the number of good faith provisions in an alliance contract is strengthened by technological uncertainty.

4.2 | The moderating effect of general alliance experience

Conversely but also grounded in sociocognitive theories, we propose that general alliance experience attenuates the effect of cognitive frame similarity. As negotiators accumulate alliance experience, they increasingly rely on their respective organizations' established and standardized approaches to similar transactions (Walsh, 1995). Our argument draws upon the overarching notion in organizational decision-making and learning research that experience fosters routinization and standardization, thereby reducing opportunities for context specific, open-ended, and ad hoc interpretation (Lillrank, 2003; March, 2010). Indeed, one reason for learning-based formalization and "ostensive" routinization in professional organizations (Feldman & Pentland, 2003) is that decision templates and rules, protocols, and decision standards reduce the need for and influence of situated, idiosyncratic, and individual interpretations for the sake of predictability and efficiency (Becker, 2004). Thus, mental shortcuts beyond those

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ingrained in routines and experiences may be less likely to influence a given decision when it is already structured by experience-based templates, rules, and protocols (e.g., Levitt & March, 1988; Sørensen & Stuart, 2000; Stuart & Podolny, 1996).

More specifically, our argument builds on alliance research that reflects this overall notion and highlights the importance of general rather than partner-specific alliance experience. In this regard, research shows how decision-makers draw on their organization's alliance experience to interpret current contractual situations and align contract terms with transaction attributes (Argyres & Mayer, 2007). Additionally, studies show that as organizations gain alliance experience, their alliance management practices tend to standardize and formalize (Findikoglu & Lavie, 2019; Kale & Singh, 2007), often through the adoption of contractual templates and "best practices" (Lumineau et al., 2011; Sarkar et al., 2009). While such templates can efficiently structure and steer the sensemaking process in a contract negotiation, they may inherently limit adaptability to the idiosyncrasies of a given alliance. For example, Lavie et al. (2012) argue that as firms develop routines, they become less flexible in adapting to changes, particularly on a "short-term ad hoc basis" (p. 1454). This observation suggests that as partners accumulate alliance experience, their contract negotiations become increasingly driven by routines and templates, potentially crowding out other sensemaking processes (Ariño et al., 2014; Mayer & Argyres, 2004). Moreover, it implies that managerial cognition in alliance contracting is influenced by *general* alliance experience rather than solely by experience with a specific partner (Findikoglu & Lavie, 2019; Hoang & Rothaermel, 2005). In other words, the accumulated knowledge and standardized practices of partners in strategic alliance negotiations influence the negotiation dynamics in different alliance contexts, not just in previous relationships between the same firms.

In this vein, we argue that as general alliance experience increases, the impact of cognitive frame similarity on contract formulation diminishes. The more prior alliances the contracting partners have undertaken, the more the partners' interpretative processes during the contract negotiations become prestructured, reducing the influence of ad hoc, situated, and interactive sensemaking. Consequently, such sensemaking—and, thus, cognitive frame similarity—plays less of a role in how the alliance partners construe future contingencies as the accumulated alliance experience of either partner grows. In other words, the prominence of interpretive processes, such as reliance on perceived cognitive frame similarity, and their impact on negotiations, including on the use of good faith provisions, decreases with the partners' general alliance experience. In formal terms, we hypothesize the following:

Hypothesis 3. The positive relationship between alliance partners' cognitive frame similarity and the number of good faith provisions in their alliance contract is weakened by the extent to which either partner has experience with alliances.

5 | BOUNDARY CONDITIONS RELATED TO TYPES OF GOOD FAITH

In addition to boundary conditions concerning the effect of cognitive frame similarity, we surmise that there are intriguing contingencies stemming from our primary phenomenon of interest—good faith provisions. While legal studies on good faith often assume uniformity in good faith provisions in contracts (Campbell, 2014; Zimmermann & Whittaker, 2000), our observations in this study challenge this assumption. During our extensive preparations for this study and our manual coding of alliance contracts, we noticed that good faith provisions differ in terms of their "strength." Specifically, we identified two clearly distinguishable types of good

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faith provisions—which we labeled "genuine" good faith and "guarded" good faith. Genuine good faith provisions are used without additional explicit stipulations to address cases in which partners fail to reach an agreement in good faith. When using this type of good faith provision, contracting partners strongly depend on their ability to resolve a given issue in good faith. The following clause from an alliance contract (Securities and Exchange Commission [SEC], 2015b) provides an example of this type of good faith provision:

> In the event of any alleged or threatened infringement by a Third Party [...], the Parties will confer *in good faith* as to how to address such infringement. [emphasis added]

In contrast, in guarded good faith provisions, partners use good faith provisions in combination with explicit provisions. These good faith provisions include an explicit contractual remedy that takes effect when good faith efforts fail. The following is an example of guarded good faith (SEC, 2015a):

> With respect to any Infringement Claim in the Field in the Territory, the Parties shall attempt to negotiate *in good faith* a resolution with respect thereto. If the Parties cannot settle such Infringement Claim with the appropriate Third Parties [...], then the following shall apply [...]. [emphasis added]

We argue that the distinction between genuine good faith and guarded good faith is crucial for our theoretical framework because it likely influences the degree to which sociocognitive mechanisms, and thus cognitive frame similarity, influence the inclusion of good faith provisions. Both genuine and guarded good faith provisions call for honest intent and reasonable efforts coupled with a legally enforceable claim. However, we contend that genuine good faith represents a "pure" form of good faith without any fallback solution, whereas guarded good faith incorporates an explicit provision as an additional "safety net." Thus, genuine good faith ultimately entails much greater interpretive uncertainty than guarded good faith does. Therefore, we propose that the sociocognitive mechanisms we have described thus far exert a more significant influence in the case of genuine good faith provisions than in the case of guarded good faith provisions. As cognitive frame similarity stimulates alliance partners' anticipation of a shared interpretation of future contingencies, the willingness to use good faith provisions and express that expectation through genuine good faith provisions increases. Conversely, higher levels of cognitive frame similarity have a weaker effect on the use of guarded good faith provisions because shared cognition—while still relevant—is less critical when there is a fallback solution. Thus, we hypothesize the following:

Hypothesis 4. The positive relationship between alliance partners' cognitive frame similarity and the number of good faith provisions in an alliance contract is stronger for genuine faith provisions than for guarded good faith provisions.

6 | METHODS

6.1 | Data and overview of research design

We assembled a dataset based on R&D alliance contracts in the biopharmaceutical industry. Collaboration plays an important strategic role in this industry, as it helps share the high costs

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and uncertainties inherent in the drug development process (DiMasi et al., 2010; Robinson & Stuart, 2007). We obtained 1700 randomly selected alliance contracts from *BioScience Advisors* (now part of *Evaluate Group Limited*), which collects contracts from SEC filings and through Freedom of Information Act requests. The database is structurally similar to the *Recap* database (now *Cortellis Deals Intelligence*), which has been used in prior research (e.g., Haeussler & Higgins, 2014; Reuer & Devarakonda, 2016). After we excluded observations with missing data,[3] our sample contained 1225 contracts signed between 2005 and 2015.

6.2 | Dependent variable: Good faith provisions

Our dependent variable, the number of *good faith provisions*, is the count of good faith provisions in each contract. In total, we manually coded 11687 good faith provisions according to a strict coding protocol. Furthermore, we distinguished between *genuine* and *guarded* good faith provisions (see Section 2 of the Online Appendix for details). We cross-validated our coding scheme with two legal experts. Moreover, every contract was coded independently by the first author and a research assistant who was unaware of the study's purpose and had received extensive training with a sample dataset (Krippendorff, 2004). Discrepancies between the coders occurred in less than 1% of the cases and were resolved through discussion.

6.3 | Independent variable: Cognitive frame similarity

Presently, there are no suitable measures for organizational-level cognitive frames and thus for cognitive frame similarity. The available measures of cognitive frames or related constructs are valuable but inapplicable to our context for a variety of reasons. For instance, interview-based research methods designed to identify cognitive frames (e.g., Grégoire et al., 2010; Lüscher & Lewis, 2008) are hardly applicable to large samples. Moreover, an interview-based approach would incur the risk of retrospective bias in noncontemporaneous data collection (Golden, 1992), e.g., driven by the ultimate success or failure of an alliance. Other conceivable measures do not precisely capture cognitive frames or suffer from other potential deficiencies for our purposes. For example, some measures are conceptualized at the individual level, are not explicitly validated, and require contemporaneous data collection and respondents' cooperation—for example, the measure of mental representations developed by Csaszar and Laureiro-Martínez (2018). Others rely on documents that are not available for smaller or non-US firms. Hoberg and Phillips (2016), for instance, develop an industry classification measure based on product descriptions in 10-K filings, and Nadkarni and Narayanan (2007) measure strategic schemas using letters to shareholders. Finally, and of particular importance, it is not inherently obvious what types of frames exist at the organizational level, both generally and in our study's specific empirical context. Thus, it was not possible to gauge cognitive frame similarity by (potentially combining and) reusing extant measures.

[3]For example, for 5% of the alliances in the sample, we were unable to obtain crucial information, such as the number of employees, for one of the partners. For 4% of the contracts, information on key terms, such as payments, had been redacted. In 7% of the cases, we could not obtain information on the targeted therapeutic area. To assess the likelihood of selection bias, we compared the average number of good faith provisions in the excluded contracts with the sample mean and found no significant differences.

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Given this lack of precedent for measuring cognitive frame similarity, we developed a new measure. Our approach builds on the widely accepted Sapir–Whorf hypothesis, which posits that language reveals people's cognitive schemas (Sapir, 1921; Whorf, 1956). In fact, scholars in organization science have empirically shown that organizational members' shared cognition is reflected in the words they use (Cho & Hambrick, 2006; Huff, 1990). These cognitive orientations become explicit when organizational members codify them through their internal and external communication (Fiol, 1995).

Our analysis blended qualitative, inductive coding of organizational web pages with scalable algorithmic text analysis. We identified the "About Us" web pages of the examined organizations as an appropriate discursive vehicle for measuring cognitive frames because (1) they reflect cognition shared throughout a firm rather than among top executives only, (2) they reflect enduring rather than merely temporarily shared values and beliefs (see Section 6 of the Online Appendix for an in-depth empirical analysis of the stability of cognitive frames using our measure), and (3) they are widely available for our sample of firms. We collected the relevant "About Us" web pages from 6 months—the typical negotiation time for an alliance contract—before the focal contracts' effective dates from the *Internet Archive*, which stores historical versions of websites.

Then, four coders who were unaware of the objectives of the study individually performed an initial manual coding of 50 "About Us" web pages. As is typical in thematic content analysis (Fanelli et al., 2009), the coders distilled emerging topics into relatively narrowly defined first-order concepts. Two of the authors and the coders unified and grouped the first-order concepts into second-order themes and retained themes deemed sufficiently important by all the coders. Finally, the team grouped combined second-order themes into five overarching cognitive frames: *time*, *responsibility*, *motivation*, *innovation*, and *strategy*.

Next, to facilitate our algorithmic analysis, we developed custom dictionaries for each of the five frames (Kabanoff et al., 1995; Popping, 2000). We randomly selected half of the contracts from our sample and extracted all words that appeared at least 10 times in the associated "About Us" web pages (Nag et al., 2007). The coders then independently assigned each word to one of the second-order themes. Words attributed to a second-order theme by at least three coders were included in the respective dictionary; those identified by fewer coders were discussed and omitted if no consensus was reached. We removed words that appeared in ambiguous contexts via semiautomated keyword-in-context analysis (Popping, 2000).

We propose that cognitive frames are reflected in the relative frequency with which words belonging to a frame appear in an organization's "About Us" web pages. For example, an organization's *time* frame is manifested in how often the organization uses words belonging to the dictionary reflecting that cognitive frame (e.g., "ago," "current," or "tomorrow") relative to each other. Importantly, this approach implies that organizations are not "low" or "high" in any frame. Instead, each organization exhibits a specific pattern within each frame.

Correspondingly, we assumed that the cognitive frame similarity of alliance partners was reflected in the similarity of these patterns. We followed prior studies (e.g., Loughran & McDonald, 2016) and used cosine similarity to quantify the textual similarity between partners' "About Us" web pages. More specifically, we measured cognitive frame similarity as the mean of the five frame-specific cosine similarities of each pair of "About Us" web pages.

In Sections 3–5 of the Online Appendix, we provide extensive details on our procedure, validation efforts, and final measure. As we explain there, we compared our cognitive similarity measure with the assessments of senior experts in the pharmaceutical industry and found substantial agreement.

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6.4 | Moderating variables: Technological uncertainty and alliance experience

To gauge *technological uncertainty*, we followed prior research and constructed a continuous measure that reflected the heterogeneity of the clinical approval success rates of compounds across therapeutic areas (Reuer & Devarakonda, 2016). Specifically, we relied on DiMasi et al.'s (2010) calculation of average success rates in different therapeutic areas and clinical phases. For each alliance, we extracted information on the therapeutic area and development phase from the contracts and accompanying press releases and matched this information with the success probabilities reported by DiMasi et al. (2010). Our final measure of technological uncertainty is the inverse of these success rates.

In line with previous studies, we measured each partner's *alliance experience* as the total number of alliances into which the organization had entered before the focal alliance (Findikoglu & Lavie, 2019; Hoang & Rothaermel, 2005). Data were obtained from *Informa Business Intelligence*, which has recorded alliances involving firms and research institutes in the biopharmaceutical industry since 1991. We cross-validated and complemented this information with press releases and contract data from *BioScience Advisors*. As the variable is highly skewed, we applied a natural logarithmic transformation.[4] In doing so, we also accounted for the diminishing marginal gains in experience from forming additional alliances (Sampson, 2005). We labeled our variables so the partner that contributed primarily to intangible assets such as R&D knowledge and expertise was denoted as the *R&D firm*, whereas the other partner, which typically provided financial support, was identified as the *client firm* (Hanisch, 2024).

6.5 | Control variables

We followed the rich tradition of contract research that builds on transaction cost economics (e.g., Hanisch et al., 2024; Reuer & Devarakonda, 2016) and controlled for transactional attributes that are likely to shape partner and governance choices. We included *technological overlap* to account for knowledge misappropriation concerns—a form of opportunistic behavior particularly relevant in the context of R&D alliances. When partners work on similar technologies, the risk of involuntary knowledge spillovers and misappropriation increases. In such situations, alliance partners may seek contractual safeguards and thus refrain from using good faith provisions. We measured technological overlap using the patent similarity measure introduced by Jaffe (1986), which is a common metric in the alliance literature (Reuer & Devarakonda, 2016; Sampson, 2007). The measure is based on data from the USPTO.

We also included the *number of prior ties* between the focal alliance partners. Again, we obtained the relevant information through *Informa Business Intelligence* and *BioScience Advisors*. By considering prior ties, we accounted for an alternative explanation, which would attribute the use of good faith provisions to the familiarity and trust cultivated among partners with previous collaborative experiences (Gulati, 1995; Poppo & Zenger, 2002). In addition, joint alliance experience has been found to be associated with relational mechanisms that a firm may have established with a specific partner (Lavie et al., 2012) as well as partner-specific routines that emerge through repeated relationships with the same partner (Findikoglu & Lavie, 2019).

[4]As a robustness check, we also used an untransformed linear measure of alliance experience, and the results are consistent.

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Relatedly, we controlled for *alliance experience disparity* to complement our experience-based measures. This measure was operationalized as the difference in the number of prior alliances established by each partner divided by the number of prior alliances established by the more experienced partner. The resulting ratio ranged from zero to one, where higher values indicated greater differences in experience. In this way, we accounted for situations in which one partner might dominate the contract design owing to more extensive experience.

Additionally, we controlled for *deal size*, measured as the natural logarithm of the sum of the upfront and maximum milestone payments agreed upon by the partners (Reuer & Devarakonda, 2016). This control is critical because a larger deal size increases the risks associated with collaboration and creates safeguarding concerns that, in turn, could influence the use of good faith provisions.

We also controlled for the *joint activity share* between the partners, as more joint activities might increase the need for contractual flexibility (i.e., good faith provisions). We measured the share of activities performed jointly by the partners relative to the total number of activities defined in the contract. We considered contractually defined responsibilities (i.e., task performance and decision-making rights) related to five activities along the value chain that are of central importance for drug development: R&D, clinical trials, regulatory approval, manufacturing, and commercialization.

Furthermore, we included control variables from the literature on alliance governance. First, we added a binary variable, *equity alliance*, to indicate whether each alliance involved equity stakes (Reuer & Ariño, 2007) and thus allowed the corresponding partners to exercise control over each other's decisions (Pisano, 1989), thereby reducing the risks associated with good faith provisions. Second, we controlled for *size disparity*—measured as the difference between the partners in terms of the number of employees divided by the number of employees of the larger partner—because larger organizations differ substantially from smaller organizations in terms of hierarchies, decision-making processes, and routines. Therefore, asymmetries in size may be related to power struggles (Lavie et al., 2012; Yang et al., 2011), which might render adaptation through good faith negotiations more difficult. Third, we included a binary variable that is equal to one if the alliance is *cross-border* and zero if the partners operate within the same legal system (Reuer & Devarakonda, 2016). This control is important because if alliance partners are from different countries, they may need more contractual flexibility to overcome differences in their respective legal systems (e.g., with respect to warranties and liabilities). Fourth, given the particularities of our research setting, we included the binary variable *biotech-biotech alliance*, which takes the value of one if both partners are biotechnology firms and zero otherwise. This variable accounts for the tendency of biotechnology firms to form horizontal alliances because they are often not fully integrated. In such cases, misappropriation concerns could be greater, and therefore, contractual designs could be more explicit (Reuer & Devarakonda, 2016).

Finally, we controlled for *contract length*, measured as the number of words in the contract, because longer contracts may naturally include more good faith provisions than shorter contracts do, and we included *year fixed effects* in the form of year dummies to account for time trends in contract design.

7 | ANALYSES

7.1 | Descriptive statistics

Table 1 reports the means, standard deviations, minimums, maximums, and correlations of all the variables. As the table shows, good faith provisions were used frequently. Good faith

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TABLE 1 Means, standard deviations, minimums, maximums, and pairwise correlations.

		Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1)	Good faith provisions	5.96	6.2	0	61	1.00																
(2)	Genuine good faith provisions	3.46	3.9	0	28	0.89	1.00															
						(.00)																
(3)	Guarded good faith provisions	2.5	3.3	0	40	0.84	0.51	1.00														
						(.00)	(.00)															
(4)	Cognitive frame similarity	0.24	0.1	0	0.63	0.19	0.19	0.13	1.00													
						(.00)	(.00)	(.00)														
(5)	Technological uncertainty	0.53	0.3	0	0.92	−0.10	−0.10	−0.08	−0.17	1.00												
						(.00)	(.00)	(.01)	(.00)													
(6)	Alliance experience of client firm	3.15	2.2	0	7.63	0.29	0.27	0.22	0.25	−0.02	1.00											
						(.00)	(.00)	(.00)	(.00)	(.41)												
(7)	Alliance experience of R&D firm	2.58	1.7	0	7.46	0.01	0.02	0.00	0.12	−0.08	0.03	1.00										
						(.61)	(.44)	(.95)	(.00)	(.00)	(.34)											
(8)	Technology overlap	0.27	0.3	0	1	0.16	0.17	0.11	0.15	−0.05	0.32	0.20	1.00									
						(.00)	(.00)	(.00)	(.00)	(.08)	(.00)	(.00)										
(9)	Number of prior ties	0.18	0.6	0	5	0.05	0.05	0.04	−0.01	0.05	0.07	0.08	0.08	1.00								
						(.08)	(.11)	(.17)	(.77)	(.07)	(.01)	(.01)	(.00)									
(10)	Alliance experience disparity	0.79	0.3	0	1	0.03	0.05	0.01	−0.09	0.07	0.14	−0.01	−0.04	0.00	1.00							
						(.23)	(.08)	(.85)	(.00)	(.02)	(.00)	(.64)	(.17)	(.89)								
(11)	Deal size	14.2	7.5	0	21.92	0.27	0.23	0.25	0.02	0.16	0.18	−0.03	0.07	0.07	0.07	1.00						
						(.00)	(.00)	(.00)	(.44)	(.00)	(.00)	(.31)	(.02)	(.02)	(.01)							
(12)	Joint activity share	0.15	0.3	0	1	0.12	0.12	0.08	0.05	0.00	0.10	−0.04	0.07	0.00	0.00	0.03	1.00					
						(.00)	(.00)	(.00)	(.10)	(.98)	(.00)	(.20)	(.02)	(.89)	(.88)	(.24)						

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TABLE 1 (Continued)

		Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(13)	Equity alliance	0.18	—	0	1	0.07	0.07	0.05	−0.06	0.09	−0.04	−0.05	−0.01	−0.01	0.02	0.11	0.06	1.00				
						(.02)	(.02)	(.07)	(.05)	(.00)	(.17)	(.08)	(.70)	(.67)	(.47)	(.00)	(.04)					
(14)	Size disparity	0.83	0.3	0	1	0.12	0.10	0.11	0.03	0.01	0.27	0.15	0.08	0.03	0.13	0.06	0.03	−0.02	1.00			
						(.00)	(.00)	(.00)	(.29)	(.76)	(.00)	(.00)	(.00)	(.36)	(.00)	(.03)	(.31)	(.51)				
(15)	Cross-border alliance	0.51	—	0	1	0.13	0.13	0.10	0.02	−0.10	0.16	−0.02	0.03	−0.06	0.05	0.08	0.03	−0.06	0.06	1.00		
						(.00)	(.00)	(.00)	(.47)	(.00)	(.00)	(.40)	(.38)	(.04)	(.11)	(.00)	(.23)	(.04)	(.02)			
(16)	Biotech-biotech alliance	0.05	—	0	1	0.03	0.00	0.05	−0.05	0.05	−0.05	−0.00	0.02	0.01	−0.02	0.09	−0.00	0.12	−0.08	−0.09	1.00	
						(.37)	(1.00)	(.09)	(.11)	(.06)	(.09)	(.99)	(.50)	(.72)	(.55)	(.00)	(.87)	(.00)	(.00)	(.00)		
(17)	Contract length	22.7	17	0.3	145.8	0.70	0.63	0.58	0.21	−0.09	0.39	0.07	0.22	0.03	0.05	0.33	0.17	0.13	0.15	0.08	0.04	1.00
						(.00)	(.00)	(.00)	(.00)	(.00)	(.00)	(.02)	(.00)	(.23)	(.09)	(.00)	(.00)	(.00)	(.00)	(.01)	(.18)	

Note: $N = 1225$. p-Values are in parentheses.

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provisions appeared, on average, 6.0 times per contract (genuine good faith provisions appeared 3.5 times), with a range from 0 to 61 (0–28 for genuine good faith provisions). Figure 1 illustrates the right-skewed distribution of our dependent variable. Approximately half of the contracts in our sample contained between zero and four good faith provisions. Extreme cases such as the maximum value of 61 were very rare (only 3% of the sample contained 20 or more good faith provisions). This variance reaffirms the importance of our research question, especially as these contracts govern similar transactions.

7.2 | Multivariate analyses

Table 2 presents the results of negative binomial regression estimations for the total number of good faith provisions and the total numbers of genuine good faith provisions and guarded good faith provisions separately. We chose this regression model because of overdispersion in the dependent variable. We report clustered standard errors at the firm level for each of the two partners because some firms (e.g., Pfizer and Sanofi) appeared multiple times in our sample.[5] In addition, we clustered standard errors at the dyad level to account for multiple alliances between the same partners.

In Table 2, Models 2–5 test Hypotheses 1, 2, and 3, whereas Models 7–15 test Hypothesis 4.[6] Models 1, 6, and 11 show the baseline specification with the control variables. Hypothesis 1 proposes that partners with greater cognitive frame similarity are more likely to use good faith provisions. In support of this hypothesis, Model 2 indicates that cognitive frame similarity is significantly and positively ($p = .004$) associated with the use of good faith provisions. In fact, the size of the effect is substantial: a one-standard-deviation increase in the similarity of partners' cognitive frames increases the expected number of good faith provisions in a contract by an average of 0.33 when all other covariates are held at their mean values. To determine whether the effect differs for different values of cognitive frame similarity, we plotted the marginal effects in Figure 2. The figure confirms this positive relationship between cognitive frame similarity and the number of good faith provisions: The marginal effects are consistently positive and statistically significant across the entire observed range of cognitive frame similarity, and the effect size increases at higher values of cognitive frame similarity.

Hypothesis 2 predicts that technological uncertainty amplifies the relationship between cognitive frame similarity and the number of good faith provisions. Model 3 shows that the interaction between cognitive frame similarity and technological uncertainty is indeed positively and significantly ($p = .003$) related to the use of good faith provisions. For a more nuanced interpretation, the upper graph in Figure 3a depicts the average marginal effects of technological uncertainty at its mean value, as well as at one standard deviation below and above the mean. The graph shows that the effect of cognitive frame similarity on the use of good faith provisions is stronger under higher technological uncertainty. Moreover, as the lower graph in Figure 3a

[5]The results regarding the direct effect of cognitive frame similarity are at least partially robust to the inclusion of organizational-level fixed effects ($p = .077$). Such fixed effects address the concern that some organizations may have a general preference for or against using good faith provisions regardless of their alliance partner. However, as the necessary inclusion of dummies for 678 organizations (of which 417 appeared only once in the sample) led to overspecification problems (e.g., some relevant standard errors and several test statistics could not be computed), we report our main results without organizational-level fixed effects.

[6][Correction added on 20 September 2024, after first online publication: In the preceding sentence, 'reHypothesis' has been corrected to 'test Hypothesis'.]

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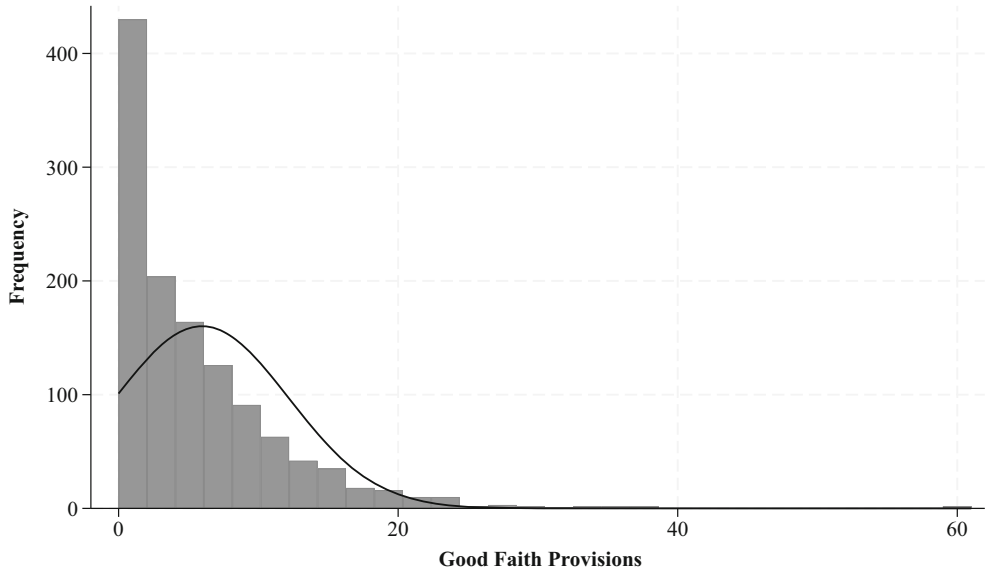


FIGURE 1 Distribution and frequency of good faith provisions.

shows, the marginal effects of the moderation are statistically significant only at a high level of technological uncertainty. At the 75th percentile of technological uncertainty, a one-standard-deviation increase in cognitive frame similarity is associated with a 0.54 ($p < .001$) increase in the average number of good faith provisions in a contract.

Hypothesis 3 suggests a decrease in the effect of cognitive frame similarity on the number of good faith provisions with an increase in the alliance experience of each partner. The results of Models 4 and 5 support this hypothesis. First, the graphs in Figure 3b depict the average marginal effects of cognitive frame similarity for different values of alliance experience for the client firm, further highlighting that the marginal effect of cognitive frame similarity becomes less pronounced with an increase in the client firm's alliance experience. For example, a one-standard-deviation increase in cognitive frame similarity increases the average number of good faith provisions in a contract by 0.99 ($p < .001$) at the 5th percentile of alliance experience but only by an average of 0.47 ($p < .001$) at the median value of alliance experience if all other covariates are held at their mean values. The marginal effects become statistically nonsignificant at values of alliance experience above the median.

Second, similar patterns emerge with respect to the R&D firm's alliance experience. As the R&D firm's alliance experience increases, the marginal effect of cognitive frame similarity on the number of good faith provisions decreases, as shown in the graphs in Figure 3c. The effect is statistically significant between the 5th and 75th percentiles of the moderator. A one-standard-deviation increase in cognitive frame similarity increases the number of good faith provisions used in a contract by 0.66 on average at the 5th percentile of the R&D firm's alliance experience, which is reduced to 0.42 at the 75th percentile. Notably, these marginal effects are weaker than those of the client firm's alliance experience. These differences are likely due to the lower variance in the experience of R&D firms (S.D. is 1.7 for the R&D firm vs. 2.21 for the client firm), which is expected, given that R&D firms tend to be smaller and more specialized and therefore enter into fewer alliances. In summary, cognitive frame similarity influences the use of good faith provisions to a greater degree when either of the partners has less experience.

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TABLE 2 Results of negative binomial regression.

	Good faith provisions					Genuine good faith provisions					Guarded good faith provisions				
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**
Cognitive frame similarity		0.07	0.07	0.09	0.09		0.08	0.09	0.10	0.11		0.05	0.05	0.06	0.07
		(0.02)	(0.02)	(0.02)	(0.02)		(0.03)	(0.03)	(0.03)	(0.03)		(0.03)	(0.03)	(0.03)	(0.03)
		[.004]	[.002]	[.000]	[.000]		[.001]	[.001]	[.000]	[.000]		[.160]	[.120]	[.067]	[.047]
Technological uncertainty		−0.06	−0.07	−0.06	−0.06		−0.07	−0.08	−0.07	−0.07		−0.04	−0.06	−0.04	−0.05
		(0.02)	(0.02)	(0.02)	(0.02)		(0.03)	(0.03)	(0.03)	(0.03)		(0.03)	(0.03)	(0.03)	(0.03)
		[.006]	[.002]	[.011]	[.003]		[.006]	[.002]	[.010]	[.005]		[.186]	[.078]	[.246]	[.105]
Alliance experience of client firm		0.00	0.00	0.01	0.01		0.01	0.00	0.02	0.02		−0.01	−0.01	−0.01	−0.01
		(0.03)	(0.03)	(0.03)	(0.03)		(0.03)	(0.03)	(0.03)	(0.03)		(0.04)	(0.04)	(0.04)	(0.04)
		[.967]	[.990]	[.770]	[.804]		[.860]	[.887]	[.575]	[.605]		[.833]	[.826]	[.887]	[.858]
Alliance experience of R&D firm		−0.02	−0.02	−0.01	−0.01		−0.01	−0.01	0.01	0.01		−0.03	−0.03	−0.03	−0.02
		(0.03)	(0.03)	(0.03)	(0.03)		(0.03)	(0.03)	(0.03)	(0.03)		(0.04)	(0.03)	(0.04)	(0.03)
		[.509]	[.538]	[.811]	[.832]		[.794]	[.815]	[.794]	[.786]		[.328]	[.379]	[.451]	[.492]
Cognitive frame similarity × Technological uncertainty			0.06		0.05			0.05		0.04			0.09		0.08
			(0.02)		(0.02)			(0.02)		(0.02)			(0.03)		(0.03)
			[.003]		[.005]			[.033]		[.055]			[.005]		[.005]
Cognitive frame similarity × Alliance experience of client firm				−0.09	−0.09				−0.08	−0.08				−0.09	−0.09
				(0.02)	(0.02)				(0.02)	(0.02)				(0.03)	(0.03)
				[.000]	[.000]				[.000]	[.000]				[.002]	[.003]
Cognitive frame similarity × Alliance experience of R&D firm				−0.03	−0.03				−0.06	−0.05				0.01	0.02
				(0.02)	(0.02)				(0.02)	(0.02)				(0.03)	(0.03)
				[.160]	[.224]				[.018]	[.024]				[.845]	[.628]
Technology overlap	0.02	0.01	0.01	0.01	0.01	0.03	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.01
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
	[.538]	[.735]	[.751]	[.701]	[.721]	[.364]	[.601]	[.607]	[.559]	[.567]	[.743]	[.758]	[.804]	[.794]	[.846]

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TABLE 2 (Continued)

	Good faith provisions					Genuine good faith provisions					Guarded good faith provisions				
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**
Number of prior ties	0.01	0.02	0.02	0.03	0.03	0.02	0.03	0.03	0.04	0.04	−0.01	−0.00	−0.00	0.01	0.01
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
	[.477]	[.353]	[.365]	[.148]	[.162]	[.187]	[.144]	[.155]	[.054]	[.059]	[.847]	[.979]	[.944]	[.731]	[.793]
Alliance experience disparity	−0.01	0.00	0.00	0.00	−0.00	0.01	0.02	0.02	0.02	0.02	−0.04	−0.03	−0.03	−0.02	−0.03
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
	[.730]	[.905]	[.975]	[.992]	[.961]	[.784]	[.456]	[.478]	[.593]	[.605]	[.259]	[.398]	[.313]	[.431]	[.360]
Deal size	0.12	0.14	0.13	0.14	0.14	0.08	0.10	0.10	0.10	0.10	0.20	0.21	0.20	0.21	0.21
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
	[.000]	[.000]	[.000]	[.000]	[.000]	[.026]	[.005]	[.007]	[.004]	[.006]	[.000]	[.000]	[.000]	[.000]	[.000]
Joint activity share	0.03	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.04	0.04	0.04	0.03	0.03
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)
	[.225]	[.264]	[.247]	[.364]	[.345]	[.381]	[.376]	[.362]	[.468]	[.455]	[.156]	[.187]	[.170]	[.255]	[.236]
Equity alliance	0.02	0.04	0.04	0.05	0.05	0.04	0.07	0.07	0.08	0.08	−0.02	−0.01	−0.01	−0.01	−0.01
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)	(0.10)	(0.10)	(0.09)	(0.09)	(0.09)
	[.795]	[.509]	[.521]	[.463]	[.474]	[.562]	[.272]	[.275]	[.218]	[.219]	[.817]	[.932]	[.921]	[.932]	[.917]
Size disparity	0.00	0.00	0.01	−0.00	0.00	−0.02	−0.01	−0.01	−0.02	−0.02	0.02	0.03	0.03	0.03	0.03
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)
	[.998]	[.904]	[.847]	[.979]	[.955]	[.598]	[.632]	[.676]	[.486]	[.524]	[.504]	[.408]	[.388]	[.397]	[.365]
Cross-border alliance	0.20	0.19	0.19	0.19	0.19	0.23	0.22	0.22	0.23	0.22	0.16	0.15	0.15	0.15	0.14
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)
	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.023]	[.024]	[.030]	[.024]	[.031]
Biotech-biotech alliance	0.15	0.18	0.17	0.18	0.18	0.06	0.08	0.08	0.09	0.09	0.23	0.25	0.24	0.25	0.25
	(0.10)	(0.09)	(0.09)	(0.09)	(0.09)	(0.13)	(0.12)	(0.12)	(0.12)	(0.12)	(0.14)	(0.14)	(0.14)	(0.13)	(0.14)
	[.111]	[.056]	[.057]	[.046]	[.046]	[.640]	[.486]	[.507]	[.436]	[.452]	[.088]	[.066]	[.079]	[.059]	[.071]
Contract length	0.66	0.63	0.63	0.62	0.62	0.64	0.61	0.61	0.61	0.60	0.60	0.59	0.58	0.58	0.57
	(0.05)	(0.06)	(0.05)	(0.05)	(0.05)	(0.05)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)
	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]

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TABLE 2 (Continued)

	Good faith provisions					Genuine good faith provisions					Guarded good faith provisions				
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**	**Model 9**	**Model 10**	**Model 11**	**Model 12**	**Model 13**	**Model 14**	**Model 15**
Year fixed effects[a]	56.51	56.48	58.58	56.13	57.79	24.81	28.45	29.06	30.58	31.10	67.80	63.24	66.58	61.17	64.35
	[.000]	[.000]	[.000]	[.000]	[.000]	[.073]	[.028]	[.024]	[.015]	[.013]	[.000]	[.000]	[.000]	[.000]	[.000]
Alpha (overdispersion)	0.300	0.292	0.288	0.284	0.280	0.375	0.364	0.361	0.354	0.352	0.383	0.379	0.369	0.369	0.360
	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Log-likelihood	−3071	−3061	−3057	−3051	−3048	−2583	−2573	−2572	−2565	−2564	−2252	−2249	−2244	−2244	−2239
Wald χ^2	621.4	661	690	708.8	739.9	527.3	572.7	593	631.4	648.6	491	503.2	531.7	544.5	589.8
	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]	[.000]

Note: $N = 1225$. Robust standard errors are in parentheses. p-values are in brackets.

[a]χ^2 values for tests of joint significance of fixed effects.

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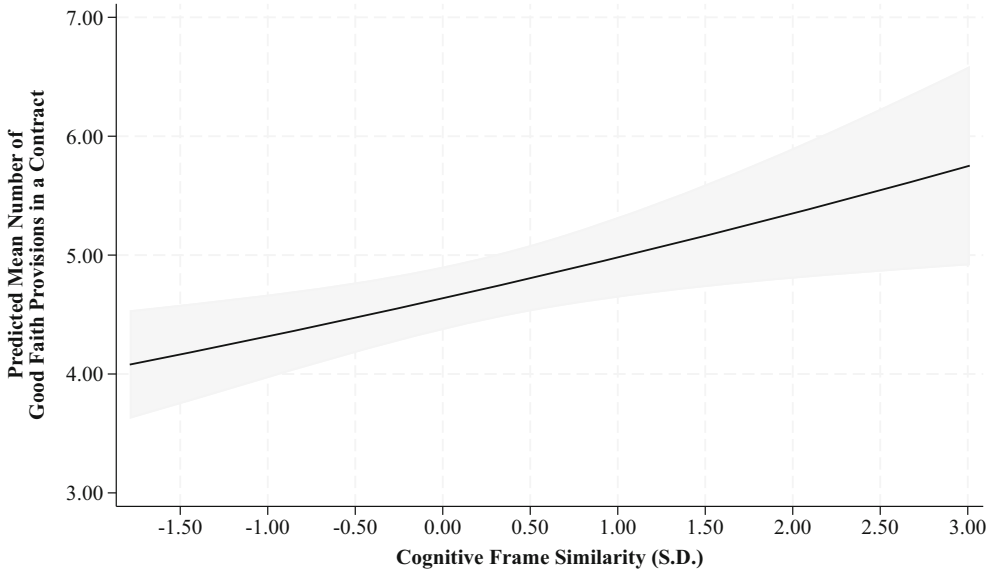


FIGURE 2 Marginal effect of cognitive frame similarity on the frequency of good faith provisions.

In Hypothesis 4, we propose that the sociocognitive processes triggered by cognitive frame similarity affect the use of genuine good faith provisions more strongly than they affect the use of guarded good faith provisions. In Models 6–15, we test this hypothesis by separating our dependent variable into genuine good faith provisions and guarded good faith provisions. The results show that the coefficients of cognitive frame similarity ($p = .001$ in Model 7 vs. $p = .160$ in Model 12) are highly significant for genuine good faith provisions but not statistically significant for guarded good faith provisions (see Section 7 of the Online Appendix for a more robust estimation and explicit coefficient comparisons with consistent results). Although these results do not technically allow us to claim direct support for Hypothesis 4 regarding a difference in effect size, the difference in statistical significance strengthens our confidence in the proposed theoretical mechanisms related to good faith provisions in general.

7.3 | Robustness analyses

In Section 7 of the Online Appendix, we present an extensive set of robustness checks. First, we replaced our cognitive frame similarity measure with various commonly used fully automated and context-free text-similarity measures (e.g., Jaccard similarity and a measure based on lexical overlap). Second, we tested Hypothesis 4 using a combined statistical model, which enabled us to validly estimate the error terms of the two dependent variables (the number of genuine and guarded good faith provisions) in one regression. Third, we reran our analyses on winsorized data and a truncated sample to ensure that our results were not driven by outliers. The results of these robustness checks corroborated our main results, increasing our confidence in the findings. Finally, we checked whether alliance partners might choose each other on the basis of the similarity in their respective cognitive frames, which would lead to endogeneity by way of selection bias. As the mean value of cognitive frame similarity between alliance partners was nearly identical to that of randomly matched pairs of organizations that did not form alliances, we concluded that no such bias was present.

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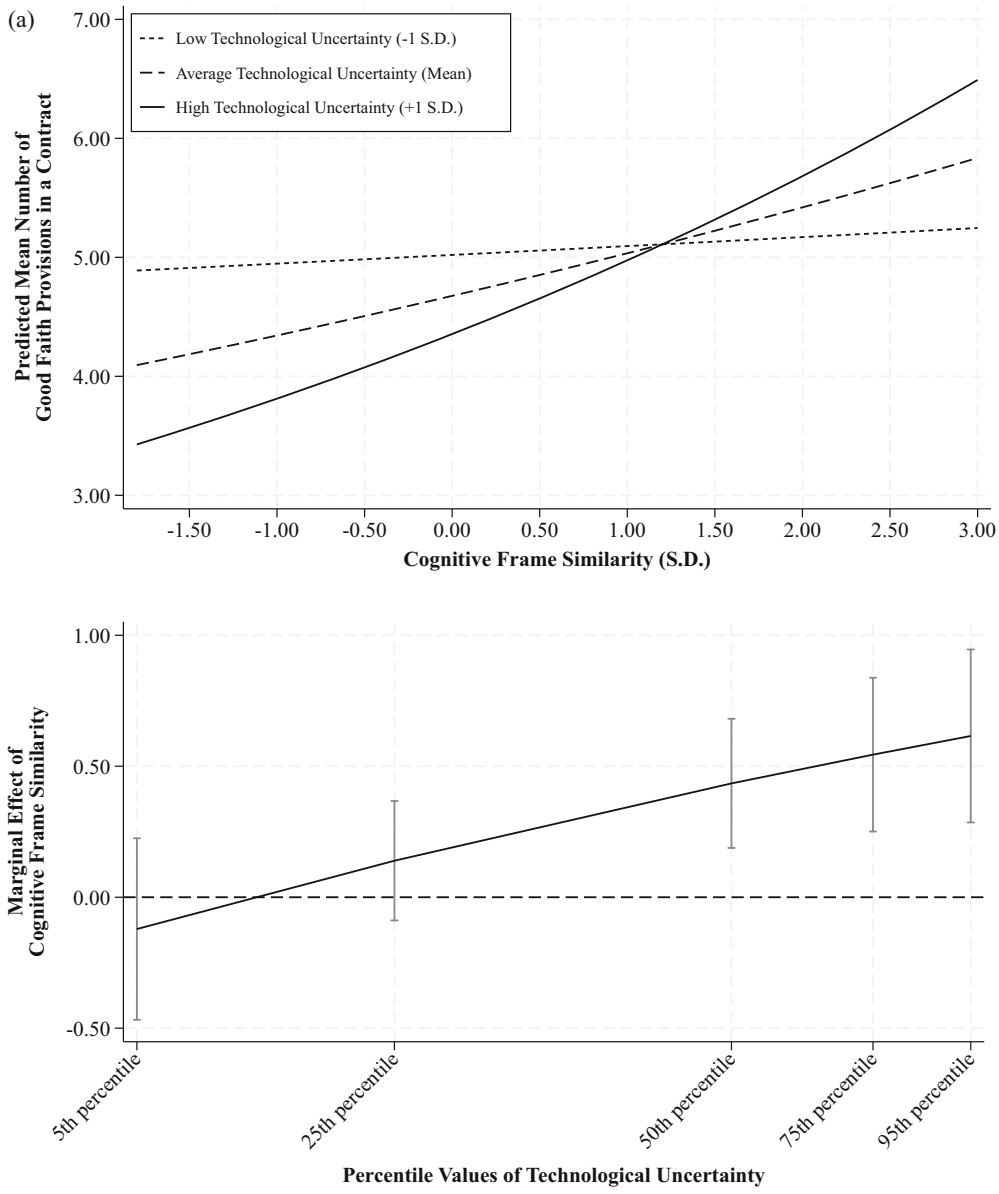


FIGURE 3 (a) Interaction between cognitive frame similarity and technological uncertainty. (b) Interaction between cognitive frame similarity and alliance experience of client firm. (c) Interaction between cognitive frame similarity and alliance experience of R&D firm.

8 | DISCUSSION

Our research advances the scholarly literature in three key areas. First, we contribute to the broader literature on interorganizational governance and contract design by providing a conceptual foundation for the study of good faith provisions. We illustrate how these provisions take a conceptually unique intermediate position between previously studied relational and contractual governance mechanisms (Poppo & Zenger, 2002; Schilke & Cook, 2015). Good faith

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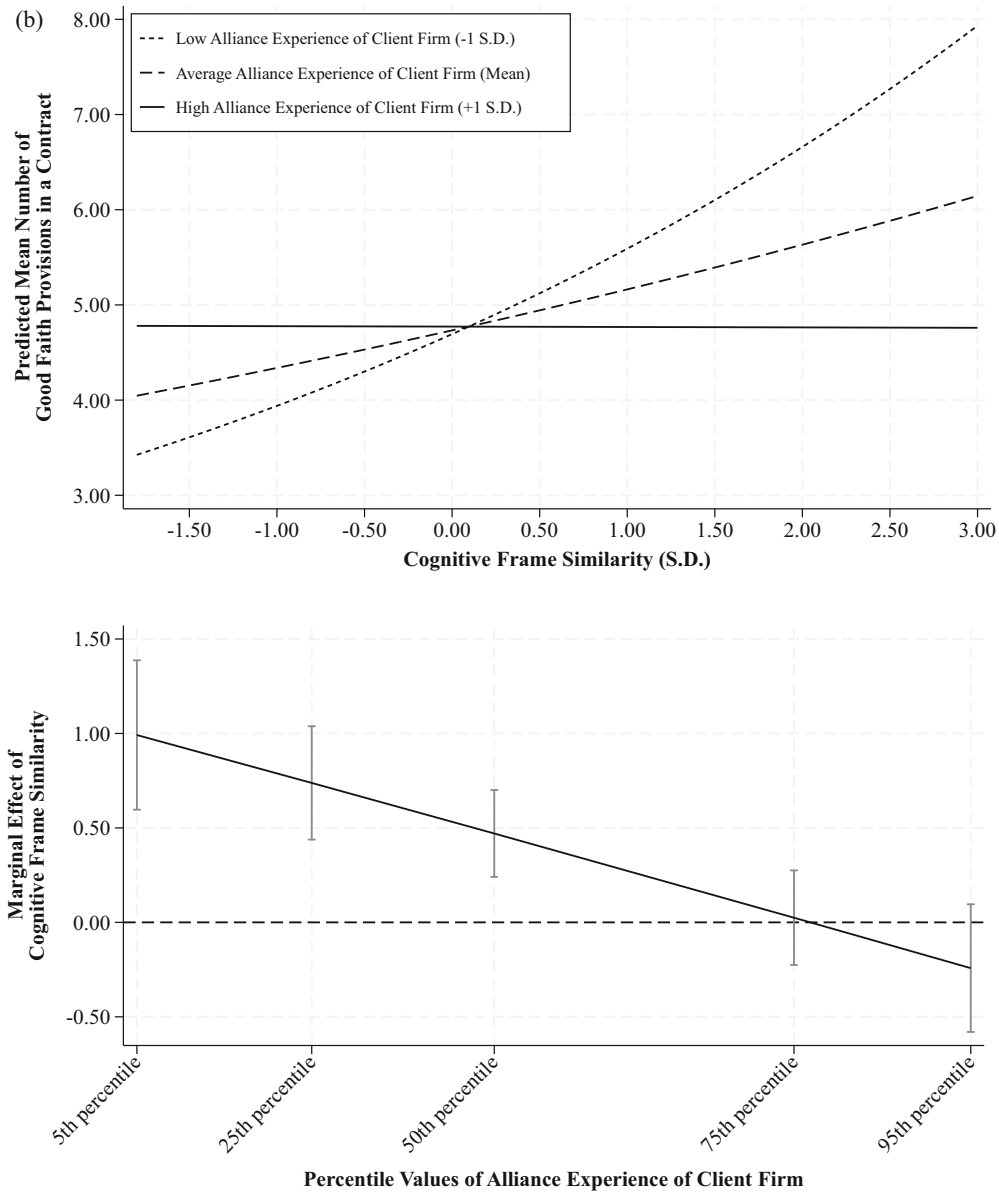


FIGURE 3 (Continued)

provisions blend relational and contractual governance by formalizing and enforcing principles of integrity and fair dealing within the relationship, albeit with considerable interpretive uncertainty (Cao & Lumineau, 2015; MacMahon, 2015; Schepker et al., 2014). Considering good faith provisions may help partly reconcile conflicting perspectives in the debate on the complementarity or substitutability of relational and contractual governance mechanisms (e.g., Keller et al., 2021; Poppo & Zenger, 2002) because, as we show, good faith provisions effectively allow parties to integrate both forms of governance.

Second, we extend the sociocognitive perspective on strategic alliances (Ring & Van de Ven, 1994) by introducing cognitive frame similarity as a novel driver of governance choices in

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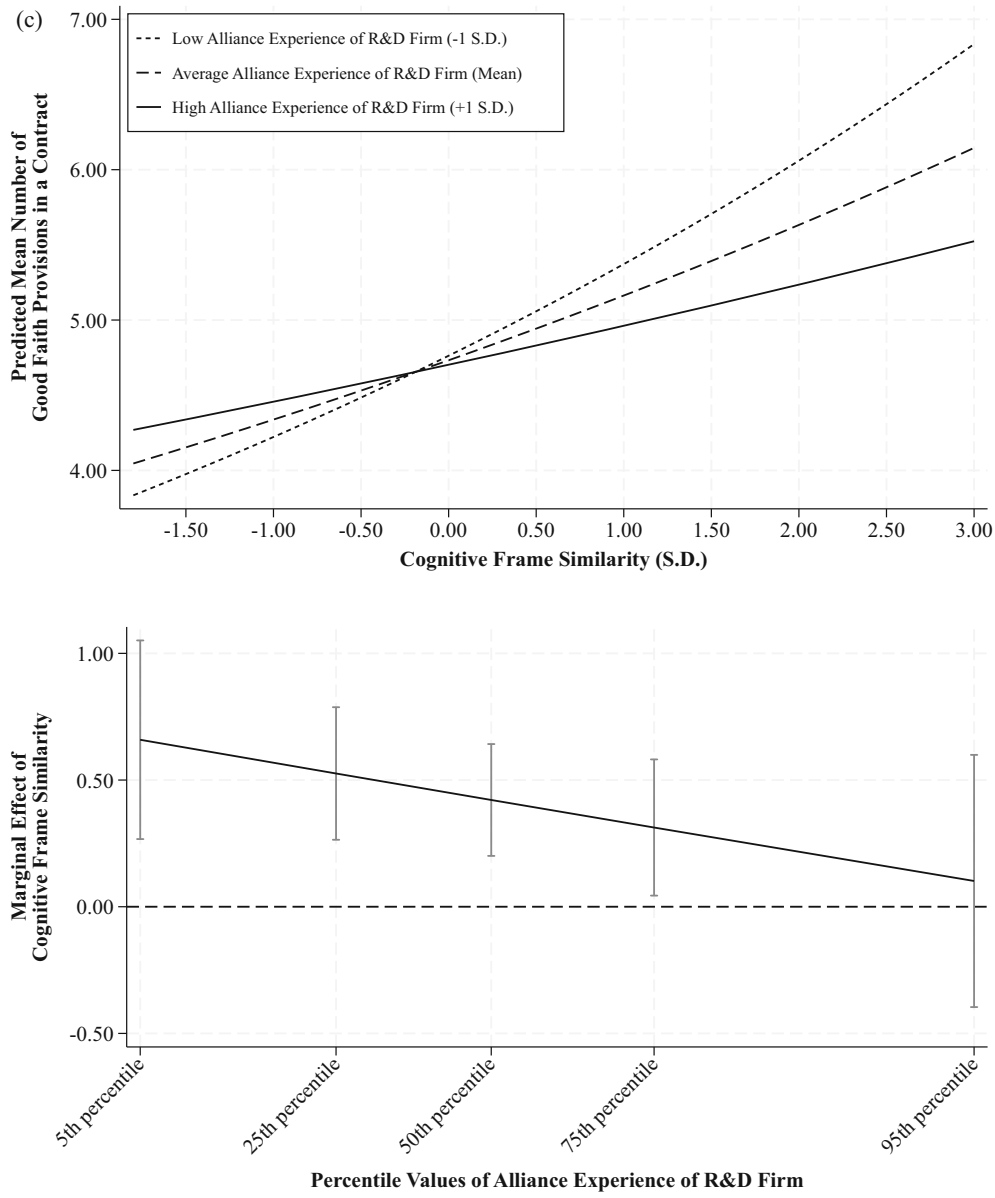


FIGURE 3 (Continued)

alliances. Along these lines, prior research has emphasized that *individual-level* cognitive frames and frame alignment are important in strategic alliances *when specific contingencies emerge* (Weber & Mayer, 2014). In contrast, and substantially expanding on these perspectives, we focus on broad *organizational-level* cognitive frames present at the onset of contract negotiations and how the similarity of these frames influences partners' *anticipation* of the future necessity for interpretive alignment concerning contingencies. Moreover, we clarify key boundary conditions associated with the relationship between cognitive frame similarity and the use of good faith provisions. Our results highlight greater marginal effects of cognitive frame

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similarity under technological uncertainty and diminished effects with increased general alliance experience and thus echo prior research indicating that decision-makers' reliance on mental shortcuts is amplified in situations of ambiguity and attenuated by experience and routines (Lillrank, 2003; Mischel, 1977). Moreover, our distinction between genuine and guarded good faith provisions elucidates a critical boundary condition related to the extent of partners' reliance on good faith provisions, demonstrating that the sociocognitive mechanisms we study exert a stronger influence when this reliance is more pronounced. Although our empirical setup precludes definitive conclusions regarding causality, the results of our moderation analyses bolster our confidence in the veracity of the theorized mechanisms.

The notion of cognitive frame similarity also adds a sociocognitive perspective to the broader literature on partner similarity in interorganizational relationships, particularly studies related to technological and market overlaps, geographic proximity, and cultural congruence or fit (e.g., Luo & Deng, 2009; Pothukuchi et al., 2002; Reuer & Lahiri, 2014; Runge et al., 2022; Sampson, 2007). Specifically, cognitive frame similarity integrates the notion of partner similarity with research on the role of organizational-level cognitive frames in shaping strategic decisions (Cornelissen & Werner, 2014; Kaplan, 2011). Related concepts of fit in the alliance literature typically concern the alignment of organizational cultures and strategic objectives (Lavie et al., 2012) and tend to be associated with notions of congruency, equilibrium, and harmony (e.g., Chatterjee et al., 1992). In contrast, cognitive frame similarity offers a window into the often subconscious and less tangible sensemaking processes that shape strategic decision-making and interorganizational negotiations.

Third, in addition to its theoretical contributions, our paper offers useful methodological advances by developing a novel, readily applicable measure of organizational cognitive frames. Conceptual studies hint at the potential relevance of cognitive frames for interorganizational governance (e.g., Vlaar et al., 2006). Our measure of organizational cognitive frames supports the empirical scrutinization of its relevance. Moreover, our operationalization of cognitive frame similarity can further the empirical examination of the processes of frame alignment, that is, the convergence of partners' cognitive frames during the negotiation phase or over the course of collaboration (Weber & Mayer, 2014). The large and growing body of research on cognitive processes in organizations (e.g., Cho & Hambrick, 2006; Cornelissen & Werner, 2014) could benefit from our measure, as this research requires unobtrusive empirical operationalizations of organizational cognitive frames. Relatedly, strategic management research has long emphasized the pivotal role of interorganizational similarities and differences (Lumineau et al., 2021) but has struggled to develop reliable and easily reproducible metrics. Overall, our approach to measuring cognitive frames and their similarity may be useful for research well beyond the context of strategic alliances, including mergers and acquisitions and buyer–supplier relationships.

Our research also has implications for managerial and legal practice. Our findings indicate that partners who negotiate alliances should be aware that contract negotiations are subject to subtle and subconscious interpretations and heuristics, specifically the perception of cognitive frame similarity. Contract negotiators need to be attuned to the cognitive processes that pervade the "meeting of the minds" in negotiations (Fortgang et al., 2003, p. 68) to ensure that critical governance decisions are made deliberately rather than subconsciously. We do not believe that the use of good faith provisions is per se advisable or inadvisable, but it should be carefully considered in view of possible adverse effects such as legal disputes. Overall, the patterns we reveal could help negotiators reflect more carefully on their contracting decisions and, ultimately, design more effective contracts.

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We recognize the limitations of our study, which open avenues for refinement and expansion. While we provide a brief overview of these ideas here, we offer a more comprehensive examination in Section 8 of the Online Appendix. First, our measure of cognitive frame similarity could be refined by considering other industries and alternative methodologies, such as field studies or the use of other discursive vehicles (e.g., contract negotiation protocols). Second, experiments could further examine the relationship between cognitive frame similarity and the use of good faith provisions, shedding light on individual-level mechanisms and bargaining dynamics. Third, additional research could further explore the nuances of good faith provisions, examine their performance implications, and investigate the interactive effects of cognitive frames and contract framing. Fourth, studies could explore how cognitive frame similarity influences interorganizational governance beyond good faith provisions, potentially affecting collaborative activities, innovation performance, and contract design. Such inquiries could employ multimethod approaches to provide comprehensive insights into governance choices in strategic alliances.

By introducing good faith provisions and cognitive frame similarity into strategic alliance research, we pave the way for diverse scholarly explorations of good faith provisions and the role of sociocognitive processes within interorganizational relationships. Given the importance of strategic alliances and the central role of contracts in governing those alliances in highly uncertain and dynamic contexts, we hope that our research inspires fruitful scholarly debates and applications in contexts where organizations collaborate and compete.

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DATA AVAILABILITY STATEMENT

The original contract data cannot be shared by the authors but can be downloaded from BioScience Advisors (https://www.bioscidb.com/). Data without identifiers, suitable for replication

[7][Correction added on 20 September 2024, after first online publication: Acknowledgments section has been updated in this version.]

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purposes, are available upon request from the authors. Sample analysis files and datasets for replicating the *cognitive frame similarity* measure can be accessed via the Online Appendix.

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