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The relational view revisited: A dynamic perspective on value creation and value capture

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Research Summary: This paper extends the relational view to offer a dynamic perspective on the factors that drive value creation and value capture over the alliance life cycle. We argue that access to complementary resources provides an initial rationale for forming alliances, but benefits from complementarity can attenuate over time. Indeed, viewed dynamically, factors that often lead to higher value creation—informal trust, repeated ties, customized assets—may also lead to diminished alliance performance. We highlight interdependence between the complementary resources of partners as *the* critical factor determining the pattern of alliance value creation, notably how quickly alliances generate value and how quickly they are likely to dissolve. We identify factors, both internal and external to the alliance, that trigger diminished value creation and increased competition for value capture among partners.

Managerial Summary: The "relational view" perspective has shown that firms create value in alliances when they identify partners with complementary resources, when they build high levels of informal trust and they share knowledge and make investments that are customized to the partner. The level of resource interdependence in alliances determines how quickly alliances can reach their potential in value creation and how quickly they are likely to dissolve. Viewed dynamically, factors that often lead to higher value creation—like informal trust, repeated ties, customized assets—may also lead to diminished alliance performance. Finally, a number of factors both internal to and external to an alliance may trigger competition between the partners within an alliance to capture the value created by the alliance and also diminish the value created within the alliance.

KEYWORDS
alliances, dynamic, relational view, value capture, value creation

1 | INTRODUCTION

Nearly 20 years ago, Dyer and Singh (1998) proposed dyads and networks as a distinct unit of analysis for understanding firm performance.[1] Dubbed the "relational view," the framework offered a theory of inter-firm value creation and proposed four primary determinants of value creation and relational rents (see footnote for definitions)[2] in alliances: complementary resources and capabilities, relation-specific assets, knowledge-sharing routines, and effective governance. Over the past 20 years, much research has examined both cooperation for value creation (Kale, Dyer, & Singh, 2002; Lavie, Haunschild, & Khanna, 2012; Mesquita et al., 2008; Yli-Renko, Sapienza, & Hay, 2001; Zollo, Reuer, & Singh, 2002) and competition for value capture in alliances (Dyer, Singh, & Kale, 2008; Lavie, 2007).

However, the original relational view model was a static model that did not consider how cooperation, value creation, and value capture unfold over time. A dynamic lens is critical because it provides greater insight into understanding both what drives cooperation for value creation and what leads to competition for value capture. To illustrate why this matters, consider some inconsistent research findings with regard to value creation in alliances—inconsistencies that we argue can be explained using a dynamic lens. For example, the relational view perspective has argued that informal safeguards (e.g., goodwill trust) are superior to formal safeguards at lowering transaction costs and increasing knowledge sharing, thereby enhancing value creation. In support of this theoretical argument, numerous empirical studies have found that high levels of trust in alliances coincide with lower transaction costs, greater information sharing, and superior performance (Dyer & Chu, 2000; Larson, 1992; Sako, 1991; Zaheer, McEvily, & Perrone, 1998). Yet, some studies have found either no relationship or a negative relationship between goodwill trust and performance in alliances (Yli-Renko et al., 2001; Zahra, Yavuz, & Ucbasaran, 2006). Taking a dynamic view, we argue that goodwill trust naturally tends to increase over the alliance life cycle and that it may result in complacency and over-embeddedness, thereby having deleterious effects on alliance performance towards

[1]Evidence that a dyad or network is an important unit of analysis for understanding differential firm performance continues to mount. For example, Mesquita, Anand, and Brush (2008) explicitly tested for separate firm (resource-based view) and dyad (relational view) effects on alliance performance and found separate effects. Adner and Kapoor (2010) found that the success of an innovating firm often depends on the efforts of other innovators in its ecosystem. Pierce (2009) showed empirically that "the strategic choices of core firms can have substantial and often devastating effects on niche market [firms] in their ecosystem." Dyer and Hatch (2006) found that U.S. auto suppliers had different levels of cost and quality performance for different automaker customers even when producing similar products within the same plant.

[2]We define value creation as the value created in an alliance (dyad/network) that is above and beyond the value created in competing arms-length market relationships. Value capture is defined as the absolute value or percentage of value created that is appropriated by each of the partners. "Relational rents" refers to the difference between the value created in a particular alliance and the value created in the next highest competing alliance or market relationship. Thus, when a relational rent is present, so is competitive advantage. Value creation and relational rents are equal when an alliance is competing only against arms-length market relationships. However, in the case where there are multiple alliances competing with one another, they all may be creating value relative to arms-length market relationships. But if they are all generating the same value, none of them is generating relational rents.

the end of the alliance life cycle. In similar fashion, firms that engage in repeated alliances (ties) with the same firm are expected to reap greater benefits from those alliances because of greater trust and improved coordination due to investments in relation-specific assets and knowledge-sharing routines. However, while some studies have shown a positive impact of repeated ties on alliance performance (Gulati, Lavie, & Singh, 2009; Zollo, Reuer, & Singh, 2002), other studies have found a negative relationship between repeated ties and alliance performance (Goerzen, 2007; Sampson, 2005). Indeed, repeated ties may lead to increased competition among alliance partners for value capture (e.g., learning races) as the partnering firms' resources converge and become redundant. Furthermore, while co-specialized assets have been theorized, and shown empirically (Dyer & Hatch, 2006; Nishiguchi, 1994) to create value in alliance relationships, some studies suggest that they are ultimately a liability under conditions of environmental dynamism (Pierce, 2009). The key point is that some of the theoretical predictions regarding the factors that are expected to result in cooperative value creation are producing mixed results empirically, and in some cases the results are opposite of what is expected. In this paper we propose that these inconsistent and paradoxical empirical results can be reconciled by examining value creation and value capture in alliances using a dynamic lens.

The primary objective of this paper is to dynamically consider how cooperation (actions for value creation) and competition (actions for value capture) evolve over time in alliance relationships. As a starting point, we re-conceptualize the original static relational view model using a dynamic lens and propose that complementary resources—and the interdependence of those resources—stands apart from the other three determinants of value creation (relation-specific assets, knowledge sharing routines, effective governance). "Complementary resources" is a state variable that provides the potential for value creation whereas the other three mechanisms are instrumental (and typically coevolve) in the process of realizing this potential. Moreover, *the degree of interdependence between the complementary resources of partners influences all aspects of the dynamics of value creation, from the relation-specific investments that partners make, to the governance mechanisms chosen, to the actual pattern of alliance value creation—with low interdependence leading to a U-shaped value-creation pattern and high interdependence leading to an S-shaped pattern.* We identify factors, both internal and external to the alliance, that trigger diminished value creation, and increase competition for value capture among partners. Finally, we examine how competition for value capture may evolve over time, with a focus on those factors that will change the bargaining power of alliance partners, thereby leading to ex post bargaining and competition for value capture (see Table 1).

2 | THE RELATIONAL VIEW: REFINING THE ORIGINAL MODEL WITH AN EVOLUTIONARY LENS

The original relational view model, depicted in Figure 1, suggests complementary resources, relation-specific assets (RSA), knowledge-sharing routines (KSR), and effective governance as sources of value creation. However, little guidance was offered with regard to the dynamic relationships among these sources of value creation, or the order in which firm actors consider them in alliance relationships.

Our refined model reconsiders these determinants of value creation from an evolutionary perspective (see Figure 2). First, firms begin the alliance partner search process by assessing whether a potential partner has complementary resources. During discussions with entrepreneurs or executives, we have frequently heard the sentiment, "The starting point for all of the alliances I've done is to

TABLE 1 Factors that influence value creation and value capture throughout the alliance life cycle

Factors that lead to initial value creation	Factors that lead to diminished value creation	Factors that lead to competition for value capture
1. Complementary resources *Low interdependence* -Rents are generated following an inverted u-shape pattern *High interdependence* -Rents are generated following an s-shaped pattern	*Internal to the alliance* 1. Changes (decrease) in resource complementarity -Leads to fewer opportunities to increase value through investments in RSA and KS	*Internal to the alliance* 1. One partner is superior at absorbing/ replicating the partner's complementary resources -Increases bargaining power for subsequent rents
2. Relation-specific assets -Investments increase with higher levels of interdependence and coevolve with knowledge sharing routines	2. Changes (increase) in relational inertia -Trust increases and supplants formal safeguards	2. One partner develops additional VRIO resources -Increases bargaining power for subsequent rents
3. Knowledge-sharing routines -Investments increase with higher levels of interdependence and coevolve with relation-specific assets	*External to the alliance* 3. Market competition leads to replication of alliance value creation resources	3. Asymmetric investments in relation-specific assets -Increases the bargaining power of the partner making fewer investments
4. Effective governance -Need for both informal and formal safeguards increases with higher levels of interdependence	4. Environmental dynamism leads to obsolescence of alliance value creation resources	*External to the alliance* 4. One partner's alliance-specific complementary resources are imitated by competitors - Provides more alternatives to the partner which increases the partner's bargaining power for subsequent rents

look for other firms that have complementary skills." The perception that another firm possesses complementary resources is what motivates a firm to initiate an alliance relationship. Thus, complementary resources as a driver of cooperation typically precedes the other three determinants of value creation at the alliance formation stage.[3] The perception that another firm has complementary resources creates the incentive to invest in RSA and knowledge-sharing routines KSR. Thus, we begin by briefly examining the role of complementary resources and capabilities.

2.1 | The role of complementary resources/capabilities and interdependence

Theoretically, resources are complementary when the marginal return to one resource increases in the presence of the other (Hess & Rothaermel, 2011; Milgrom & Roberts, 1995). While this accurately defines "complementarity," it provides little guidance as to how to assess whether or not specific resource combinations are complementary ex ante. One approach to assessing complementarity—and how value will likely be created in the alliance—is to consider whether the partner's synergy-sensitive resources are *tangible resources/assets* (e.g., plant, equipment, locations), or *intangible resources* (e.g., knowledge) or both. We argue that the nature of complementary resources will influence subsequent investments in RSA or KSR designed to create further synergies from the complementary resources.

For example, in many alliances value is expected to be created by combining tangible assets—where collaborating parties are trying to leverage and exploit complementary physical assets. Supplier–buyer (vertical) alliances in physical product industries, like the automotive industry, have

[3]Subsequent alliances between firms may follow a different order as informal governance, knowledge-sharing routines, and relation-specific assets may allow firms to discover additional valuable complementarities. Initial alliances between firms, however, are driven by complementary resources.

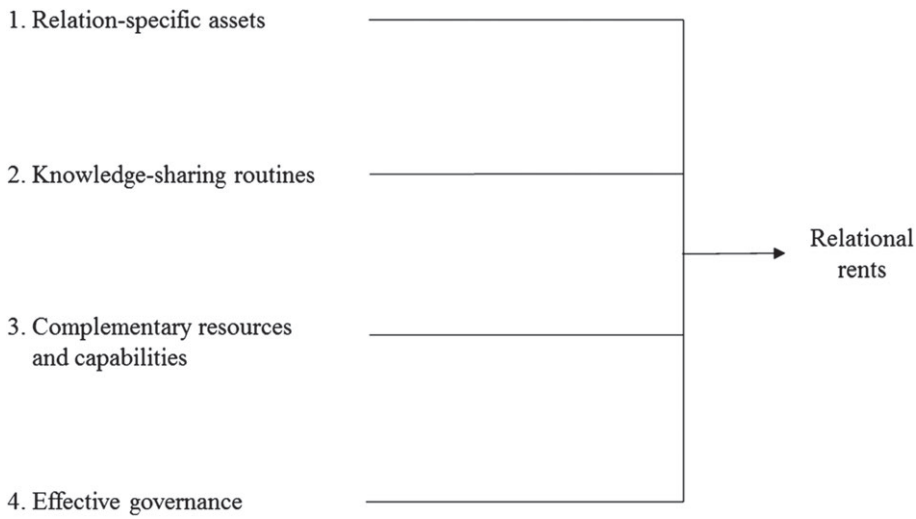

FIGURE 1 The original relational view model: determinants of relational rents

been found to largely create value through coordination routines that leverage complementary tangible assets, such as plant locations or equipment (Dyer, 1996). Alliances that are formed around these types of complementary resources are likely to benefit initially from investments in RSA, as depicted in Figure 2. Thus, from a dynamic perspective, alliances formed to access complementary tangible assets are more likely to be alliances that will benefit from improved coordination achieved through investments in RSA. In contrast, alliances that are formed around intangible resources (e.g., knowledge), particularly alliances where the goal is exploration, are more likely to benefit from subsequent investments in KSR. For example, research on R&D alliances suggests that partners that develop effective processes for sharing knowledge and absorbing new knowledge are more likely to be successful at creating value (Vasudeva & Anand, 2011).

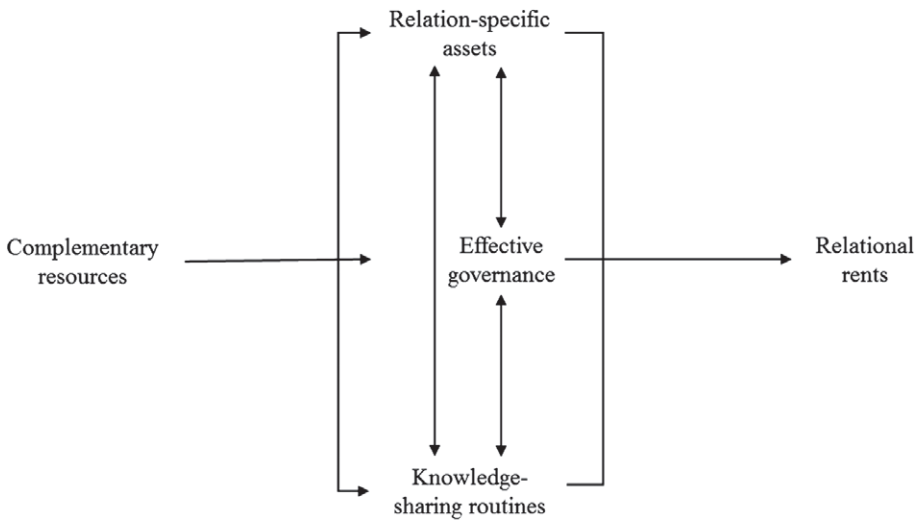

FIGURE 2 A dynamic relational view model: determinants of relational rents

It is worth noting that complementary resources can generate value on their own without additional investments in RSA or KSR (Baum, Cowan, & Jonard, 2010). For example, when McDonalds and Coke join their brands to jointly advertise their offerings, the firms may be able to create additional value (e.g., through brand associations and savings from sharing advertising costs) without needing to make investments in RSA or KSR. The same could be said when Disney teams with McDonalds to put Disney character toys in Happy Meals (though this requires some higher level of coordination than just jointly advertising their brands).

However, complementary resources are *only* likely to generate value without subsequent investments in RSA or KSR when the resources are characterized by a *low level of interdependence.* In the cases referenced above, the partners' brands are pooled (modular) to create value with a low level of resource interdependence. As partners attempt to generate rents from complementary resources, *they first must consider the nature of interdependence or degree of coordination required to realize gains from the complementary resources.*

A key element in generating value from complementary resources is the cost of coordination across firms, which is driven by the nature of resource interdependence (Gulati & Singh, 1998). The notion of interdependence proposed by Thompson (1967) arrays substantially different, and increasing, coordination needs between the least challenging (pooled or modular interdependence), the moderately challenging (sequential interdependence), and the most challenging (reciprocal interdependence). Pooled interdependence suggests that each partner brings a self-contained set of resources to the relationship where gains can be achieved by linking self-contained modules. Sequential interdependence requires higher levels of organizational coordination as the output of one partner is the input to the other. Finally, reciprocal interdependence requires complex and overlapping division of labor that requires continuing mutual adjustments that require each partner to link specific activities with other partners closely and regularly.

Beyond categorical approaches to representing interdependence of shared activities across partners, more recently interdependence of activities has been modeled using NK simulation models. Shared activities can be modeled using representations of dependence between policy choices made by each partner in the relationship. Using NK modeling, low interdependence can be represented by a decomposable matrix of choices—each partner makes choices on sets (modules) of policies that are loosely coupled with modules managed by the partner. At the other extreme, choices made by partners in the alliance can be highly interconnected (thus modeling reciprocal interdependence). The merit of this simulation approach is that many different forms of interdependence can be represented, as the matrix of interaction of activities can be customized to a particular setting (Ethiraj & Levinthal, 2004). Using NK modeling of interdependence, Aggarwal, Siggelkow, and Singh (2011) find that shared activities involving higher (more integrated) interdependence perform better when matched with more hierarchical decision making structures in contrast with lower (more modular and decomposable) interdependence, which can be managed by arms-length coordination.[4] As Gulati and Singh (1998) note, generating synergies in the context of reciprocal interdependence is more challenging than in situations of pooled or sequential interdependence. The complexity of coordination between partners increases as the degree of interdependence increases. In the context of reciprocal interdependence, the higher complexity of coordination of activities to access complementary resources would require partners to invest both in higher levels of relationship-specific assets and in knowledge-sharing routines. This leads to our first proposition:

[4]It is possible that decision makers forming alliances may error in assessing interdependence prior to alliance formation. Agarwal, Aggarwal, and Singh (2017) address this issue by modeling the impact of erroneous assessments of interdependence pre-alliance formation on coordination failures between partners over time.

Proposition 1 *The greater the resource interdependence between complementary resources, the greater the potential value creation through subsequent investments in relation-specific assets and knowledge-sharing routines.*

2.2 | Relation-specific assets, knowledge-sharing routines, and effective governance

High interdependence between complementary resources will require investments in RSA and KSR due to coordination demands. Moreover, RSA and KSR tend to coevolve over time. In other words, as firms decide to invest in RSA, they are often able to leverage those assets to create interfirm KSR; likewise, as firms establish interfirm KSR, they often discover other opportunities to create value through additional investments in RSA. At the root of this dynamic is the idiosyncratic nature of RSA and KSR. This idiosyncrasy gives rise to directional growth in the presence of excess capacity (tangible resources) or relatedness (intangible resources) (Penrose, 1959; Winter & Bryce, 2007). Therefore, follow-on investments will tend to be proximal to prior investments.

Specifically, new investments will leverage old investments in ways that create interconnectedness and expansion at a particular activity locus. Theoretically, this dynamic gives rise to real options to expand or grow; (Vassolo, Anand, & Folta, 2004), stepping stones, (Wernerfelt, 1984), or growth platforms (Laurie, Doz, & Sheer, 2006) for additional investments in RSA or KSR. If made, these investments will increase the interdependence of partners. As an example of this coevolution, Toyota Boshuku, a Toyota seat supplier, decided to invest in a RSA in its relationship with Toyota by building its manufacturing plant next to a Toyota plant. After making this investment, it then created new KSR to coordinate transactions (the manufacturing and transportation of seats) from its plant to Toyota's plant. Indeed, locating the plant next door provided opportunities for the two firms to create new face-to-face KSR as it dramatically reduced the cost of face-to-face interaction. These frequent face-to-face meetings helped the two firms identify additional opportunities to invest in RSA. For example, rather than transport the seats by truck, they determined it would be more efficient to transport the seats by conveyor belt—another relation-specific asset investment that created additional value by reducing the cost of transporting seats. Thus, each new investment created options for additional value-creating investments that increased inter-firm interdependence. This example illustrates the dynamic coevolving relationship between RSA and KSR:

Proposition 2 *All else being equal, relation-specific assets and knowledge-sharing routines dynamically coevolve. Greater investments in one creates options for increased investments in the other, thereby increasing the potential for value creation.*

It is important to note that the nature of resource interdependence between partners influences not only investments in RSA and KSR but also the choice of governance mechanisms. High resource interdependence, which leads to high investments in RSA and KSR, creates appropriation (cooperation) concerns that arise with investments that are not easily re-deployable (Klein, Crawford, & Alchian, 1978; Williamson, 1985). Research has shown that when partners anticipate appropriation concerns, they are more likely to organize alliances with more hierarchical governance structures (e.g., hierarchical contracts, equity) to ensure cooperation (Gulati & Singh, 1998). However, as noted by Gulati and Singh, governance must be chosen not only to ensure cooperation but also to minimize coordination costs. Like Aggarwal et al. (2011), they find that as resource interdependence increases, so do coordination costs, and the optimal governance structure will need to be more hierarchical (e.g., hierarchical contracts, equity). Thus, the greater the resource interdependence between partners, the greater the appropriation concerns and the greater the coordination

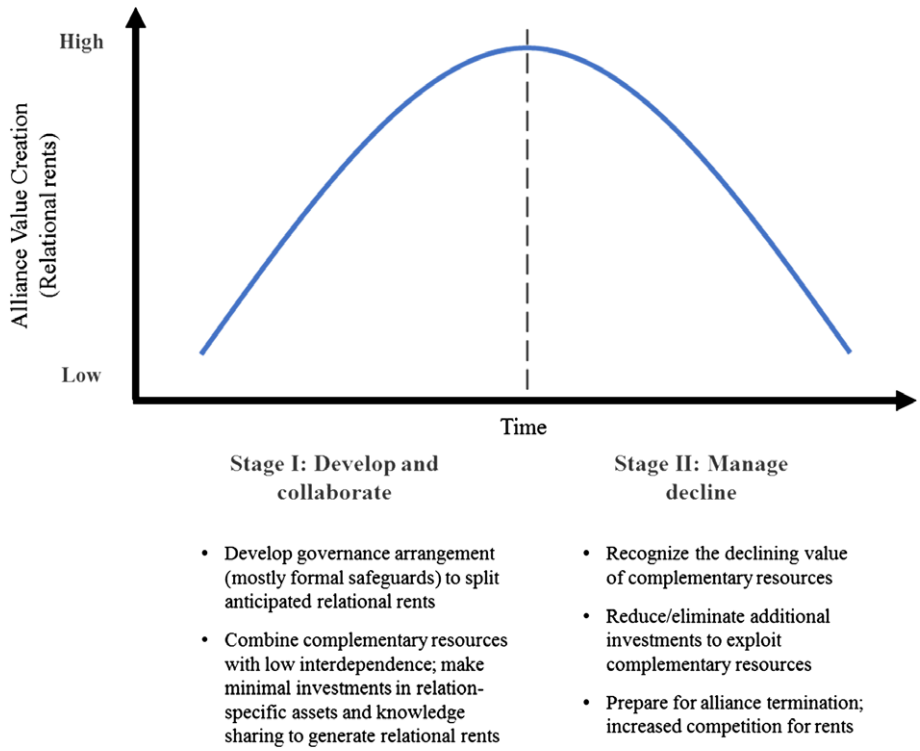

FIGURE 3 Pattern of relational rents from alliances with low resource interdependence

costs—both of which will increase the need for hierarchical governance mechanisms. In summary, resource interdependence plays an important role in a *dynamic relational view model.*

3 | INITIAL CONDITIONS: RESOURCE INTERDEPENDENCE AND PATTERNS OF VALUE CREATION

The dynamic model outlined in Figure 2 illustrates the inter-relationships among the four key sources of rents. With this general model in mind, we can now dig deeper into how the initial conditions of the alliance—notably the degree of interdependence between the partners' complementarity resources—cast a "shadow of the future" that influences the pattern of relational rents generated over the alliance life cycle.

The initial condition that plays a key role in the dynamics of value creation is complementary resource interdependence. As mentioned previously, the first step in forming an alliance is for potential alliance partners to: (a) assess whether a partner has complementary resources, and (b) assess the nature of the interdependence between its resources and those complementary resources. When resource interdependence is relatively low, the dynamic path of cooperation and rent generation is different than when it is high.[5] More specifically, resource interdependence influences governance

[5]Alliances differ in many ways, which is why researchers have often distinguished alliances by their "type" or purpose—marketing, R&D, manufacturing, distribution, or vertical (supplier–buyer) versus horizontal (between competitors or complementors). This categorization is often useful because the nature of the complementary resources and their interdependence often differ by type, but the nature of the complementary resources and their interdependence is what is critical in distinguishing among alliances.

as well as investments in RSA and KSR. To illustrate, when resource interdependence is low, we would anticipate that rents generated from the alliance will follow an inverted-U shape, as shown in Figure 3. This pattern suggests that, in the context of low resource interdependence, rents can be generated rather quickly but also tend to dissipate rather quickly. For example, governance mechanisms are likely to be based on relatively simple contracts because of a clear division of labor/tasks and each partner has fewer interdependent resources at risk. Put another way, alliances that are low in interdependence are more decomposable.

To illustrate, let's return to the example of McDonalds and Disney teaming up to put movie character toys in Happy Meals. This can be implemented rather simply (and hence quickly) and governed by a relatively simple contract. The simplicity associated with "pooled interdependence" means that alliance partners can quickly generate rents from the alliance without investing extensively in coordination mechanisms as would be required in settings of higher resource interdependence. Moreover, when interdependence is low, there is little need to make investments in RSA or KSR which typically take time to develop and deploy—and have a longer useful life. Not only are low interdependence alliances faster to rent generation, they are also faster to rent dissolution because of the modular nature of interdependent resources. To illustrate, when AT&T and Apple formed an alliance to jointly promote and sell the iPhone and AT&T phone service, they had relatively low interdependence, which allowed them to make it a time-bound alliance (5 years) at which time the alliance dissolved. When resource interdependence among partners is low, partners can more quickly pool and "un"-pool complementary resources, which is what leads to the inverted-U pattern of relational rent generation.[6]

> **Proposition 3** *When interdependence between the complementary resources of alliance partners is low, relational value creation will typically follow an inverted-U shaped pattern.*

While the pattern of value creation in alliances characterized by low interdependence tends to be fast-in, and fast-out, such is not the case in alliances where complementary resources are highly interdependent. Rather than a U-shaped pattern, we suggest that over time the value generated from an alliance characterized by a high level of interdependence will follow an S-shaped pattern (see Figure 4). Alliances that are high in interdependence—and thus require greater cospecialization of assets, development of knowledge-routines, and informal and hierarchical governance—take more time to reach fruition and are less decomposable. Thus, these alliances generally take more time to dissolve. Thus, we anticipate relatively low value emerging early on in the alliance life cycle as partners incur coordination costs as they explore and validate how to create value from the highly interdependent resources—and as they develop more sophisticated governance arrangements to ensure cooperation and effective coordination. In the early and middle stage of the life cycle, partners make increasing investments in RSA and KSR. As mentioned earlier, there is a synergistic relationship between RSA and KSR—more of one tends to lead to more of the other. Thus, in the second stage, alliance partners ramp up their investments and their coordination routines and value from the alliance begins to grow accordingly. At some point, however, the partners run out of new opportunities to exploit mutual complementarity either due to resource convergence or resource divergence

[6]It is worth noting that the middle part of the inverted U, which depicts that the alliance is creating value, could last a long time for low interdependence alliances. But once the parties decide to end the alliance, value creation drops quickly. We describe the inverted U- and S-shaped patterns as "typical" but they should be viewed as stylized representations. We do not make claims about whether the flat part of the U will be long or narrow or the shape of the S will be short or long. Various factors, including management preferences or strategic choices, will influence the exact pattern of value creation.

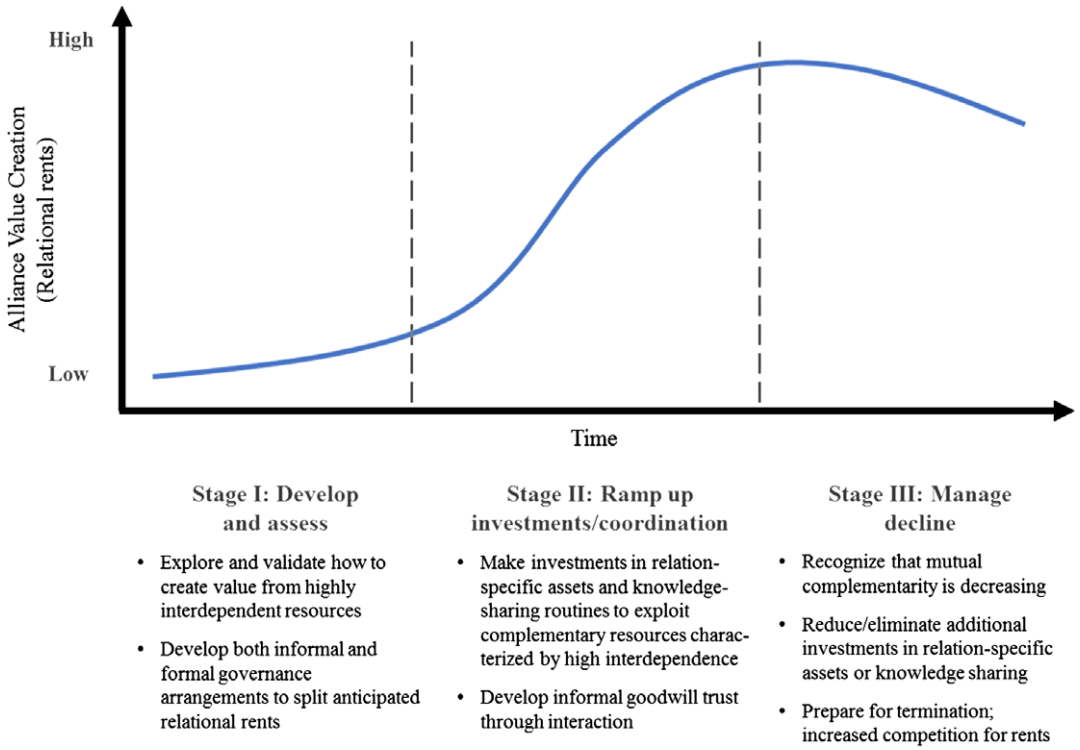

FIGURE 4 Pattern of relational rents from alliances with high resource interdependence

(Mowery, Oxley, & Silverman, 1996, 1998)—or simply because their joint products target markets that have entered the mature and decline phase of the S-curve where the population of new customers tapers off. As a result, partners cease to make additional investments in RSA or KSR. As a result, the partners typically anticipate and plan for the decline and eventual termination of the relationship.

Proposition 4 *When interdependence between the complementary resources of alliance partners is high, value creation will typically follow an S-shaped pattern.*

Understanding these typical patterns of value creation in alliances is useful because it helps explain some of the paradoxes identified in the introduction, such as why high trust or repeated ties don't necessarily lead to improved alliance performance. The timing of *when* an alliance is studied matters. A dynamic theory must consider changes in resource complementarity between partners over time as well as changes in governance—which ultimately influence changes in cooperation and value creation. In some cases, value creation may be realized rather quickly due to low resource interdependence. In these cases, the growth and decline of cooperation and the associated value creation follow an inverted-U shaped pattern. In other cases, due to high interdependence, value is created more slowly following an S-shaped pattern.

Our discussion of a dynamic version of the relational view has thus far focused on those factors that lead to increased cooperation and value creation over time. We now examine the factors that lead to diminished value creation (cooperation) during the alliance life cycle, thereby resulting in eventual alliance termination.

4 | RELATIONAL VALUE CREATION OVER TIME: FACTORS THAT LEAD TO DIMINISHED COOPERATION AND RELATIONSHIP TERMINATION

As suggested in the prior section, at some point value creation begins to decline in an alliance relationship, as shown in the inverted-U and S-shaped patterns in Figures 3 and 4. Generally speaking, we anticipate that the formation of an alliance will lead, at least in the short run, to the partners discovering new resource complementarities to exploit. As firms work together in an alliance, it seems likely that they would share knowledge that would lead to the discovery of additional complementarities. In turn, this would be expected to lead to additional projects between the partnering firms that would result in an expansion of cooperative effort and increased value creation (as shown by the upward trend in value creation in the inverted-U and S-shaped patterns). The greater the complementarities that are discovered and exploited, the higher the value that is created and the longer its duration.

We argue that there are two primary factors internal to the alliance relationship that lead to the downward inflection in value creation: (a) diminished complementary resources between partners due to resource convergence or resource divergence, and (b) increased relational inertia which negatively influences alliance value creation activities. We also argue that there are two primary factors that are external to the relationship that can lead to a downward inflection in value creation: (c) replication or replacement of value-creation resources by competitors, and (d) environmental dynamism that results in obsolescence of the value-creation resources in the alliance.

4.1 | Internal context: Changes in complementary resources and diminished value creation

Although there is potential for synergies due to complementarities between partners' resource combinations, there is also a potential for partners' resources to converge (meaning they become redundant) or diverge (through changes in resource allocation, divestiture, or strategic direction), thereby leading to diminished complementarity. This suggests that the degree of complementarity between resource combinations in an alliance is not fixed over time.

One way that partnering firms' resources evolve to create less complementarity is through resource convergence. Resource convergence is likely to happen at a more rapid rate when the complementary resources of partners are easily acquired/absorbed (e.g., knowledge resources). Nonpatented knowledge, unlike tangible assets (e.g., plant, equipment, land) or even some intangible resources (e.g., brand, patents) cannot be effectively protected and can be absorbed/replicated by a partner. Mowery et al. (1996, 1998) find that allying firms are more likely to develop overlapping knowledge bases (resource convergence) when their pre-alliance technology resources have significant overlap. Overlapping knowledge bases increase the absorptive capacity of the alliance partners as do specific processes that firms can develop to absorb the knowledge of the partner (Hamel, 1991). Interfirm knowledge transfer, and resource convergence, is also more likely to occur in equity alliances (a governance arrangement that facilitates knowledge transfer) and when partners have similar corporate cultures and are from the same country (Nakamura, Shaver, & Yeung, 1996). Sampson (2005) shows that the lack of positive effects from repeated ties in R&D alliances appears to be due to, "knowledge depreciating over time, since only recent experience has a positive impact on collaborative returns." As previously mentioned, such absorption is particularly a threat when the knowledge that resides within the two partnering firms draws on overlapping knowledge domains (Cohen & Levinthal, 1990; Mowery et al., 1996). Under these conditions, the partner is likely to have sufficient absorptive capacity to absorb the knowledge of the other firm, which leads to faster

resource convergence and termination of the alliance (Hamel, 1991; Khanna, Gulati, & Nohria, 1998). This may explain why Goerzen (2007) found that firms with a propensity to enter repeated equity-based partnerships (equity facilitates knowledge transfers and resource convergence) experience inferior economic performance.

The findings of Sampson and Goerzen are in direct contrast to a study of repeated ties in a broad sample of alliances (mostly non-R&D alliances) that found increasing returns to repeated ties (Gulati et al., 2009). Repeated ties allow partners to build informal safeguards (trust) and invest in relation-specific assets or knowledge-sharing routines that are critical when resource interdependence is high. But value is more likely to be sustained in repeated ties when the complementary resources are not appropriable knowledge resources or when the knowledge resources diverge. Indeed, Mowery et al. (1996) find that in many instances the technology bases of partners diverge over time as one partner simply accesses the necessary knowledge through the partnership. This may work well as long as there is only a moderate level of divergence of partner technology bases (i.e., the knowledge bases are not so divergent that there is not any relevant complementarity). However, in some cases a partner may modify its resource base through divestitures, acquisitions, or resource reallocation in ways that reduce complementarity with an existing partner. This will lead to diminished value creation in an alliance. Partnering firms can attempt to avoid resource convergence by developing or acquiring knowledge resources in nonoverlapping technology domains (with moderate levels of divergence/relatedness), thereby providing new opportunities to collaborate by sharing nonredundant knowledge.[7] This leads to the following proposition:

> **Proposition 5** *The greater the proportion of complementary resources that are replicable or replaceable by the partner, the more rapidly complementarity among partners will decrease, thereby leading to diminished value creation.*

4.2 | Internal context: Changes in informal governance and diminished value creation

As originally formulated, the relational view emphasized the crucial role of informal governance as essential to value creation. Informal governance potentially lowers contracting, monitoring, adaptation, and recontracting costs; it also may provide superior incentives for value creation initiatives (Dyer & Singh, 1998, p. 671). Implicit in this reasoning was a prevailing view that formal mechanisms (such as contracts) and informal mechanisms (such as trust) were, at best, substitutes (Gulati, 1995). Some scholars in the 1990s (Ghoshal & Moran, 1996; Ring & Van de Ven, 1994) even viewed formal governance as undermining informal governance. According to this view, efforts to design and enforce contracts undermine the development of trust and can lead to more, not less, opportunistic behavior. Thus, a reliance on formal contracting is likely to destroy value.

The benefits of informal safeguards relative to formal safeguards leads to the following assumption: partners are better off when they can develop informal safeguards that will substitute for formal safeguards for a range of highly interdependent activities. From a dynamic perspective, the development of informal safeguards (trust) in an alliance requires time and social interaction—something that naturally happens in alliance relationships as the partners work together to create value. As partners begin a new relationship, they may rely on formal safeguards such as contracts. However, as

[7]The only way for alliance partners to avoid diminishing resource complementarity is by continually expanding their portfolio of nonredundant resources, thereby creating opportunities for new combinations among partners. For this to happen, a firm would have to continue to grow its portfolio of resources in perpetuity—which is inconsistent with empirical studies which show that products, businesses, and firms typically grow and decline following an S-shaped pattern.

they clarify expectations, develop norms, and prove their reliability, informal governance is likely to emerge—especially when there is high resource interdependence. Recent studies offer support for this argument, finding that the relative reliance on informal safeguards increases when relation-specific investments are present (Li, Poppo, & Zhou, 2010) and partners have familiarity either through direct interaction or reputation (Schilke & Cook, 2015).

While informal mechanisms such as trust are often essential to effective governance, especially under conditions of high interdependence, informal mechanisms can sometimes prove to be a liability when they lead to what we label *relational inertia.* Relational inertia can lead to complacency and loss of market discipline between partners, leading to a loss of adaptability. Relational inertia is evident when goodwill trust and embeddedness lead to persistence in underperforming alliances (Patzelt, Lechner, & Klaukien, 2011; Patzelt & Shepherd, 2008; Young-Ybarra & Wiersema, 1999), or in what Stevens, MacDuffie, and Helper (2015) label "excessive trust." Such trust can result in too great a reliance in the form of blind faith, complacency, excessive obligations, escalating commitments, and a contentment that prevents partners from benchmarking each other to external standards (Stevens et al., 2015, p. 1240). As Szulanski, Capetta, and Jensen (2004, p. 608) note, "Trustworthiness promotes both functional and dysfunctional processes, fostering receptivity on the one hand and lessening the perceived need for vigilance on the other hand."

Relational inertia may also reduce an alliance's adaptability to changing conditions (Maurer & Ebers, 2006) and can result in rigidity over time (Thorgren & Wincent, 2011). Partners with a history of repeated ties may be less likely to search for more optimal solutions (Jeffries & Reed, 2000). If combinatorial knowledge is crucial to innovation and adaptive problem solving, then the knowledge sets of firms repeating ties may become more redundant over time (Goerzen, 2007). In short, repeated ties are less likely to trigger questioning, scrutiny, validation, and search (March, 1991; Szulanski et al., 2004; Zahra et al., 2006). This is consistent with Uzzi's (1997) finding that embeddedness becomes an economic liability at some level because firms become insulated from information outside their networks.

While many alliances develop relational inertia, such inertia is not inevitable. The contrasting examples of Toyota and Nissan are instructive. Nissan was plagued by relational inertia in its alliances while Toyota developed formal controls to prevent it. Dyer (2000) found high trust relationships between both Toyota and Nissan and their "keiretsu" (i.e., partner) suppliers; however, Toyota's suppliers performed at higher levels than Nissan's. A key difference was that Toyota established "design contests" to push keiretsu suppliers to compete with each other on new designs and regularly monitored suppliers' costs and pressed them to reduce prices.

Nissan did not utilize these more formal controls, and its keiretsu suppliers were reported to behave more like "in house divisions" with high levels of trust but also higher levels of complacency. There was also "lock-in" due to high levels of investment in relation-specific assets. The poor performance of Nissan and its suppliers prompted Nissan to do something in 1999 that was radical for a Japanese firm—bring in a foreigner, Carlos Ghosn, to lead the company. Ghosn (2002) restructured the keiretsu relationships, breaking the strong ties that existed, which earned him the nickname "keiretsu killer." Nissan's increased profitability over the 5 years after Ghosn took over, from −5% ROA (1996–1999 average) to 5% ROA (2004–2006 average) was attributed in large part to restructured supplier relationships.

This case illustrates that the dynamic development of trust can lead to poor performance if it isn't accompanied by more formal controls to battle complacency. Indeed, there is a growing consensus that informal and formal safeguards serve as complements to one another, particularly in successful alliance relationships (see, for example, Carson, Madhok, & Wu, 2006; Faems, Janssens, Madhok, & Van Looy, 2008; Poppo & Zenger, 2002).

In summary, informal governance that has grown over time and served to facilitate investments in RSA and KSR can become a liability if the partners are not vigilant in preventing relational inertia. Relational inertia will lead to a propensity to persist in underperforming alliances or be generally less adaptive.

> **Proposition 6** *Under conditions of high interdependence and declining complementarity, greater reliance on informal safeguards is more likely to negatively affect value creation.*

4.3 | External context: Market competition and diminished rents

Valuable partnership resources are subject to competitive imitation (Barney, 1991; Cui, Calantone, & Griffith, 2011). If a firm obtains competitive advantage through a partnership, rivals are motivated to form similar partnerships involving similar complementary resources (Gimeno, 2004). In order for alliances to generate relational rents, it must not be possible for competing dyads/networks to imitate the interorganizational resources and capabilities. Just as firms can lose their source of competitive advantage through imitation of their resources and capabilities by competitors, so can dyads/networks. However, imitation by competitors is much more difficult when there is a high degree of resource interdependence between partners which leads to causal ambiguity and complexity (Barney, 1991).

To illustrate, Dyer (1996) documented how Toyota achieved quality advantages (based on JD Power's quality metrics) through investments in relationship-specific assets with keiretsu suppliers. At the time, Korean automaker Hyundai-Kia lagged far behind in quality. In 1997, the head of procurement for Hyundai-Kia reported: "We view Toyota as the world leader in quality with the best supplier management practices. We don't pay attention to other automakers. We are replicating what Toyota has done in Toyota City at our complex in Ulsan, Korea. Our suppliers build their plants close to ours and we are imitating Toyota's processes." (author interview, June 15, 1996; see Dyer, Cho, and Chu, 1998).

Due to high levels of resource interdependence between Toyota and its suppliers, imitation by Hyundai-Kia was extremely difficult and time consuming. It took 15 years for Hundai-Kia to begin to improve their quality ratings. However, since 2010, Hyundai-Kia's quality ratings have improved significantly, suggesting that they have been somewhat successful in imitating Toyota's RSA and KSR with suppliers. In fact, in 2016 Kia became the first non-luxury brand to achieve the top rating in JD Power's initial quality study (even surpassing Toyota). Thus, it appears that the quality advantages that Toyota had achieved with its suppliers has gradually diminished through knowledge spillovers and imitation. But high interdependence made imitation by Hundai-Kia very difficult.

> **Proposition 7** *The lower the resource interdependence between partners and the greater the market competition to imitate partnership resources the more rapidly relational rents will diminish in the focal alliance.*

4.4 | External context: Environmental dynamism and diminished rents

In addition to market competition, discontinuous technology, demand, or regulatory shocks in the environment can also result in a downward inflection in the pattern of rent generation. While not all industry environments are similarly affected, at least some industry environments are characterized

by more frequent shifts in technology, demand, competition, or regulation that create adaptation challenges (Davis, Eisenhardt, & Bingham, 2009; McCarthy, Lawrence, Wixted, & Gordon, 2010). The *rate of change* and the *magnitude of change* may influence relational rents differently, however. For example, when interdependence is high, technology shocks (Schilling, 2015) or competence-destroying innovation (Pisano, 1990; Rothaermel, 2002; Tushman & Anderson, 1986) can make it especially difficult for the partners to adapt. A technological, demand, or regulatory change of great magnitude may obsolete one or more partners' competencies. The ability of partners to move quickly in response to shocks is impaired because the need for mutual adjustment required by intense interdependence means that adaptation is likely to be more time-consuming than is the case when efforts to adapt are more autonomous. Moreover, adapting may require capabilities that are beyond those that exist within the partnership.

In contrast, alliances in highly dynamic environments, where changes are rapid but more incremental within a technology platform, may perform well because the partners can work collaboratively to respond to changing market conditions (Bensaou & Anderson, 1999; Schilke, 2014). To illustrate, Bensaou and Anderson (1999) tested the hypothesis that high technological uncertainty would result in lower levels of relation-specific investments between automakers and supplier partners. They assumed that when technological uncertainty was high, this would discourage investments in relation-specific assets because transactors would want to maintain flexibility. Surprisingly, they found the opposite to be true. They explained that automakers "may manage this problem [technological uncertainty] by choosing to be proactive, to forge a relationship early on with a desirable supplier and work with that supplier to anticipate and deal with technological uncertainty. In other words, the buyer can 'endogenize' technological uncertainty within the relationship" (Bensaou & Anderson, 1999, p. 474). Note that Bensau and Anderson studied automaker-supplier partnerships within the internal combustion engine technological platform. The findings might be quite different in a discontinuous change setting, like the one that automaker-supplier relationships may experience with the emergence of Tesla and long-range battery electric vehicles (BEV).[8]

Environmental changes that are larger in magnitude or discontinuous pose significant adaptation problems, particularly when interdependence is high. As a firm's competitive environment becomes highly dynamic or discontinuous, it can destroy the value of the complementary resources and relation-specific assets of existing partners. Thus, a firm may find it difficult to compete if saddled with a partner that relies on obsolete complementary resources. For example, Nokia's reliance on its operating system partner Symbian enabled it to achieve a leading position in smart phones until Apple introduced the iPhone. The iPhone dramatically undermined the value of Symbian's resources and eventually led to Nokia pursuing a partnership with Microsoft. Nokia's long-term relationship with Symbian arguably inhibited its ability to respond to the iPhone challenge in a timely way. Both Nokia and Symbian were constrained from making the larger changes the environment required because of the need to coordinate with one another. Either may have been faster to adapt without the constraints that high interdependence imposed. Ceteris paribus, a firm will seek new partners that possess the resources and capabilities favored by change, particularly when the discontinuous change has rendered existing RSA and KSR obsolete. Thus, dynamic environments characterized by discontinuous change will have adverse effects on value creation in established alliances. It is interesting to note that, increasingly, partnering firms realize this challenge as recent evidence shows that firms are more likely to employ time bound alliances (Bakker & Knoben, 2014) under conditions of

[8]Indeed, recent evidence suggests that the technological (Carlson, 2015) and regulatory changes (France will not allow the sale of ICE vehicles after 2040) associated with EVs could destroy the value of relation-specific ICE investments between automakers and their supplier partners.

high environmental dynamism. However, obsolescence is less problematic and time-bound alliances more practical with lower levels of interdependence.

> **Proposition 8** *The greater the environmental dynamism characterized by discontinuous change the more rapidly relational rents will diminish in the focal alliance.*

5 | A DYNAMIC VIEW OF COMPETITION FOR VALUE CAPTURE

Firms that establish alliances must first consider how they plan to achieve cooperation and value creation in those alliances. However, they also need to consider how they will *capture* value from the alliance, splitting the gains with partners. In this section, we examine how *competition* for rents and value capture may evolve over time.

Prior research has shown that the "common benefits" (vs. private benefits, which we ignore here) that are jointly generated by alliance partners are distributed among alliance partners primarily as a function of resource dependence theory (Dyer et al., 2008; Pfeffer & Salancik, 1978). According to the resource dependence perspective, partners that bring the more critical or scarce resources to the relationship (in Barney's, 1991 VRIO framework, resources that are valuable, rare, inimitable, and non-substitutable) will have more bargaining power and be able to appropriate a higher percentage of the rents in ex ante negotiations (See Asanuma, 1989; Barney, 1991; Pfeffer & Salancik, 1978).[9]

Research in the automotive industry provides a nice illustration of resource dependence theory and how it influences the distribution of relational rents. During the 1980–2000 time period, Toyota and its partner suppliers made roughly 50% higher profits than did competing automakers and their suppliers (Dyer, 1996, 2000). However, Toyota made much higher profits (ROA = 13.0%) than its partner suppliers (average ROA = 7.1%), which indicates that it was able to appropriate a greater percentage of the relational rents. Toyota was able to appropriate a higher percentage of the gains due to its control over more valuable, rare, and inimitable resources (brand, system integration skills, manufacturing know-how, etc.). Partner suppliers could not easily replace Toyota whereas Toyota could more easily replace a given supplier. However, some partner suppliers like Denso made profit returns (ROA = 12.8%) similar to those of Toyota. Why? Because Denso brought more valuable, rare, and inimitable resources to the relationship. Denso designs and manufactures complex electronic components that can only be supplied by a few suppliers (fewer substitutes). Moreover, Denso's capabilities in electronics (a technology that has become more important to the performance of an automobile) helped it bargain more effectively for a high share of the pie.

5.1 | Competitive forces in alliances: Impact on value capture

Although perceived resource dependence will determine the split of expected value creation at the time the alliance is initiated (ex ante bargaining power), the bargaining power of partners can change over time (ex post bargaining power). Bargaining power is defined as the ability to favorably change

[9]As Coff (1999) has shown in his study of bargaining power between knowledge-based employees and firms, this assumes that both parties have a shared understanding with regard to the extent to which each partner possesses resources that are valuable, rare, and nonsubstitutable (VRIO resources). In short, each partner will determine the extent to which the partner can easily be replaced as well as how replacing a partner will influence the creation of, and distribution of, common benefits. Thus, a key success factor in appropriating value in an alliance relationship is convincing your partner that you possess VRIO resources and that the partner's share of the pie created (common benefits) will be greater than with any other partner.

the terms of agreements and to obtain accommodations from partners (Lavie, 2007; Yan & Gray, 1994). As Lavie (2007, p. 1193) argues: "Because of the quasi-formal nature of alliances and the inherent incompleteness of alliance agreements, bargaining power matters not only at the alliance formation stage but also throughout the alliance life cycle, when market conditions change or under-specified agreement terms need to be renegotiated."[10] We argue that a firm's bargaining power and ability to appropriate value in an alliance relationship can increase over time in four ways:

1. Replication or replacement of the partner's complementary resources (e.g., learning race) leading to greater ex post bargaining power.
2. Development of additional VRIO resources that are synergistic with the alliance leading to greater ex post bargaining power.
3. Asymmetric (lower) investment in relation-specific assets leading to less relative dependency on the partner and greater ex post bargaining power.
4. Preventing imitation of its VRIO resources by competitors (more effectively than its partner), thereby leading to greater ex post bargaining power.

5.2 | Replicating partner's resources

Ex post bargaining power in an alliance can change as a result of one partner doing a significantly better job of replicating or replacing its partner's knowledge and resources. As noted by Cohen and Levinthal (1990), firms differ in their level of general absorptive capacity; and Lane and Lubatkin (1998) note that firms also differ in their level of "partner-specific absorptive capacity." Naturally, when one partner is able to quickly absorb its partner's complementary knowledge, this changes the perception of the relative contributions of the partners to the relationship. Hamel's (1991) detailed examination of nine alliances revealed that in many cases the partners tried to internalize the partner's skills while protecting their own. He found cases where the alliance evolved into a learning race and dissolved because one partner had completely mastered the skills of the other through significant investments in learning. As one manager in his study observed, "[Our partner] tries to suck us dry of technology ideas they can use in their own products." In similar fashion, Dyer, Sakakibara, Powell, and Wang (2013) found that some firms in R&D alliances realized better performance outcomes by devoting more technical personnel to the alliance, thereby increasing the firm's alliance-specific absorptive capacity. Thus, from a dynamic perspective, when one firm does a significantly better job of assimilating or replicating the knowledge and resources of its partner, this will change the balance of bargaining power and that firm should be able to capture a greater percentage of the joint value created over time.

> **Proposition 9** *A firm in an alliance that has made greater investments in replicating the knowledge and resources of its partner will appropriate a higher percentage of the subsequent value generated from an alliance relationship.*

[10]Research has shown that, consistent with equity theory (procedural fairness), boundary spanners in alliances are motivated to recommend renegotiation in an alliance when conditions have changed and they believe that their focal firm is not receiving an equitable piece of the pie (Arino & De La Torre, 1998; Luo, 2002).

5.3 | Developing additional VRIO resources that are relevant to the partnership

As previously mentioned, the ex ante split of the expected value/pie from the alliance will be based upon the perceived value of resources that each partner brings to the alliance. However, as the alliance unfolds and value is created, it may become apparent that one firm's resources are more valuable than initially perceived. Or alternatively, one partner may build or acquire new resources that are valuable to the relationship. To illustrate, when Disney entered into its first alliance with Pixar, it had significant bargaining power because of its brand and distribution clout. Pixar did have emerging computer-generated animation (CGI) skills as well as storytelling skills but had no brand recognition or distribution/marketing clout. As a result, Disney got a large percentage of the jointly created pie. Over time, Pixar further developed its CGI and storytelling skills, and after a stream of five blockbuster hits it had built a well-recognized brand for animated films—even better than Disney for CGI movies. As a result, when Pixar and Disney went to renegotiate their agreement, Pixar was able to demand a much larger piece of the pie. As noted in an LA times article titled, "Disney, Pixar, Seas Apart in Contract Talks" the acrimonious contract talks "were triggered when Pixar presented Disney with an aggressive proposal that would extend the companies' five-film deal but only if the Burbank company would agree to a radical change in their relationship….Disney insiders have made clear that their willingness to concede ground has limits—notwithstanding Pixar's extraordinary string of five consecutive hits... 'We're not going to do a deal that's bad for this company,' said one top Disney executive." (Eller, 2003). The ex-post bargaining challenges were significant enough that eventually Disney decided to simply purchase Pixar.

This example illustrates that competition for capturing value will increase over time when one firm is more effective at developing additional complementary VRIO resources that are synergistic with the alliance. Indeed, due to equity (procedural fairness) theory, the firm that has increased its VRIO resources relative to its partner will eventually demand a greater share of the pie (Arino & De La Torre, 1998; Cui et al., 2011). The tendency of firms to renegotiate their positions in an alliance relationship to achieve equity is illustrated in a study by Arino and de la Torre (1998, p. 306) who find that "the partners' assessments cause them to either engage in renegotiation of the terms of the contract, or to modify their behavior unilaterally, in an attempt to restore balance to the relationship." Arino and de la Torre find that the process of renegotiation, when inequity by a partner is perceived, "continues until a new mutual understanding of equity is restored, or else the relationship deteriorates gradually until a point when the venture is dissolved." Thus, we posit that a firm that brings greater VRIO resources to the alliance over time will negotiate for a larger share of the joint value created.

> **Proposition 10** *A firm in an alliance that develops or acquires a larger portfolio of resources that are synergistic with the value-creating resources in the alliance will appropriate a higher percentage of the subsequent value generated from an alliance relationship.*

5.4 | Asymmetric investments in relation-specific assets

The decision to invest in relation-specific assets is a major strategic issue in alliances because it is both a source of value creation and a barrier to the exit of a relationship (Bensaou & Anderson, 1999; Williamson, 1985). Williamson (1985) identifies three types of asset specificity: 1) site specificity (locating facilities nearby), 2) physical asset specificity (customized equipment or processes), and 3) human asset specificity (personnel who develop knowledge that is primarily valuable in the

partnership relationship). Prior research has shown that the degree to which partners make asymmetrical investments in relation-specific assets will influence bargaining power and value capture in alliance relationships (Dyer, 1996; Klein et al., 1978). Relation specific investments are valuable because they create appropriable quasi-rents, or value above and beyond what could have been generated through general purpose investments.

However, as indicated by transaction cost theory (Williamson, 1985), relation-specific investments also create the potential for opportunism on the part of the transaction partner that has not made the investment. When alliance partners make symmetric investments in relation-specific investments, this creates mutual lock-in and these investments serve as credible commitments on the part of both parties. But when relation-specific investments by alliance partners are asymmetric, the firm that makes fewer investments over time will have greater bargaining power (greater ability to appropriate the quasi-rents) in ongoing negotiations. This greater bargaining power derives from the potential to "hold up" the alliance partner that has invested in assets that are not easily redeployable to other uses.

As described earlier in the Toyota Boshuku example, initial investments in relation-specific site and physical assets often lead to the path dependent discovery of other opportunities to invest in relation-specific assets. As a consequence, investments in relation-specific assets accumulate and increase over time, often well beyond what was initially anticipated by the original governance arrangement. This is particularly true for the partner that made greater initial investments in relation-specific assets because greater initial investments create greater opportunities for subsequent investments. This dynamic path places the alliance partner making greater cumulative investments in relation-specific assets in a weaker bargaining position as the relational quasi rents that the partner can appropriate increase over time (Klein et al., 1978). This can lead to unintended lock-in effects and can result in the partner with fewer cospecialized investments having greater ex post bargaining power.

> **Proposition 11** *The greater the difference in initial relation-specific asset investments by partners, the greater the likelihood that the firm making fewer investments will appropriate a higher percentage of the subsequent value generated from the alliance.*

5.5 | Preventing imitation of VRIO resources by competitors

The first three factors that lead to increased competition and ex-post bargaining over value creation are factors that change the balance of resource dependence *within* the alliance relationship. In other words, ex post bargaining would occur in the relationship regardless of what happens in the external environment. However, in some cases, a partner's resources become less valuable and rare due to imitation by competitors. In these instances, a firm may have competitors imitate its complementary resources such that its partner now has other equally viable options. When this happens, this reduces the ex-post bargaining power of the firm that has been imitated. Once again, due to equity (procedural fairness) the partner that now has the scarcer resources will engage in ex post bargaining to appropriate a higher percentage of the subsequent rents. This increase in competition for rents is particularly problematic when resource interdependence between partners is low, which makes it easier to switch to a more attractive partner.

> **Proposition 12** *A firm that has been more successful than its partner at preventing imitation by competitors of the value-creating resources it has brought to the alliance will appropriate a higher percentage of the subsequent value generated from an alliance relationship.*

6 | CONCLUSION

Over the past 20 years two sets of tensions have played a significant role in our thinking about rents earned from alliances and network relationships: cooperation versus competition, and value creation versus value appropriation. The balance, or lack thereof, between the simultaneous forces of cooperation and competition is an important theme in the alliance literature. In this paper, we present a dynamic relational view of the drivers of value creation and value capture in alliances. We contend that access to complementary resources provides an initial rationale for forming alliances, but benefits from complementarity can attenuate over time. We highlight *interdependence between the complementary resources of partners as the critical factor determining the pattern of alliance value creation*, notably how quickly alliances generate value and how quickly they are likely to dissolve. In particular, alliances incorporating a higher level of resource interdependence result in more enduring rents, but also face more challenging governance arrangements.

Our work also suggests that viewed dynamically, many of the relational view mechanisms that are often argued to lead to effective value creation (such as repeated ties, trust, cospecialized assets), may (over time) actually trigger diminished alliance performance. For example, in addressing inconsistent empirical findings on the role of repeated ties in alliance governance, we propose that the inconsistencies can be understood by using a dynamic lens. In some alliances repeated ties lead to decreasing complementarity of resources over time, thereby leading to decreased value creation—and in some cases, increased competition. Moreover, in some instances the emergence and use of informal trust to attenuate opportunism (hold-up and malfeasance) in the alliance can lead to relational inertia. Relational inertia is, in a sense, a different form of opportunism where a partner takes advantage of its partner's goodwill; but nonetheless it has a negative impact on value creation. In fact, scholarly debate on trust as a device to address opportunism may be overemphasizing the role of informal modes of governance in addressing opportunism. Instead, we propose examining the complementary use of both informal and formal safeguards over time, particularly in contexts of high interfirm interdependence. A dynamic lens is important because the different factors that influence alliance performance may have different effects when studying different types of alliances (e.g., low interdependence vs. high interdependence) or studying alliances that are at different stages of the alliance life cycle.

From an evolutionary perspective the fundamental challenge is one of addressing the tensions between value creation and value appropriation. Competitive forces pose a challenge as partners seek to appropriate the benefits from cooperation. Differential rates of knowledge absorption and learning, as well as processes of replicating or replacing partner resources, impact the magnitude of value appropriation. Investment in RSA becomes a double-edged sword over time: higher RSA investments potentially drive higher joint value but can result in lock-in and asymmetric distribution of relational rents.

Our work offers a set of propositions on the evolution of drivers of relational rents. The use of interfirm relationships to cope with technological and industry-level changes continues unabated but underscores the need for a nuanced understanding of the evolution of the drivers of relational rents and their consequences. We hope that our work serves to highlight the important tensions inherent in the evolution of relational rents and leads to a greater focus on the dynamic forces that influence the creation and distribution of relational rents.

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