Journal of Management
Vol. 47 No. 7, September 2021 1820–1840
DOI: 10.1177/01492063211000422

Worlds Apart? Connecting Competitive Dynamics and the Resource-Based View of the Firm

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Competitive dynamics (CD) and the resource-based view (RBV) emerged simultaneously from the study of strategy more than three decades ago. The two subfields have advanced since then to occupy established positions in strategic management. Generally, CD is outward-focused and interested in a firm's moves and countermoves in the marketplace. The RBV looks inward, examining a firm's internal organizational capabilities, its tangible and intangible resources. They have mostly been investigated independently; with limited exceptions, researchers have yet put together the two pieces of internal capabilities and external competitive profile. Consequently, we have only a fragmented snapshot of the firm's core strategic elements and behaviors. Here, we compare and contrast the two perspectives along a number of dimensions such as focus of attention and conception of competitive advantage. Based on this understanding, we explore the CD-RBV interface, specifically how central elements of these research streams may be considered jointly to expand our understanding of firm behaviors and outcomes. We highlight limitations and lapses in the literature and suggest directions for future researchers interested in developing new theories connecting the intellectual boundaries of these two important strategy subfields.

Keywords: *competitive dynamics; resource-based view; interfirm rivalry*

Acknowledgments: The authors would like to thank Peiyuan Huang, Danny Miller, Tony Tong, Xun Brian Wu, and Eric Zhao for their valuable comments on an earlier draft of this paper. Insightful and constructive feedback from Dave Ketchen, editor of this special issue, is also greatly appreciated. Financial support and research assistance from the Darden School Foundation, University of Virginia and the Center for Competitive Dynamics and Innovation Strategy, School of Economics and Management, Tsinghua University is gratefully acknowledged.

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Competitive dynamics (CD) and the resource-based view (RBV) of the firm have become prominent subfields within strategic management scholarship over the past 35 years. From early work by MacMillan, McCaffery, and Van Wijk (1985), the primary focus of CD has been the study of interactions and interrelationships among firms in the marketplace. Scholars in CD viewed competition in a way that was qualitatively different and thus differentiated itself (Hambrick & Chen, 2008) from the predominant treatment of competition, which was based on industrial organization economics (Porter, 1980). A major distinctive feature of this line of work is its strong behavioral orientation. Following the conception of firm strategy as a series of consistent decisions (Mintzberg, Raisinghani, & Thoeret, 1976), CD researchers have focused on the study of specific strategic behaviors of a firm—that is, its actions (and responses) in its engagement with rivals—as well as management's decision-making and agency in initiating, responding to, or ameliorating competition.

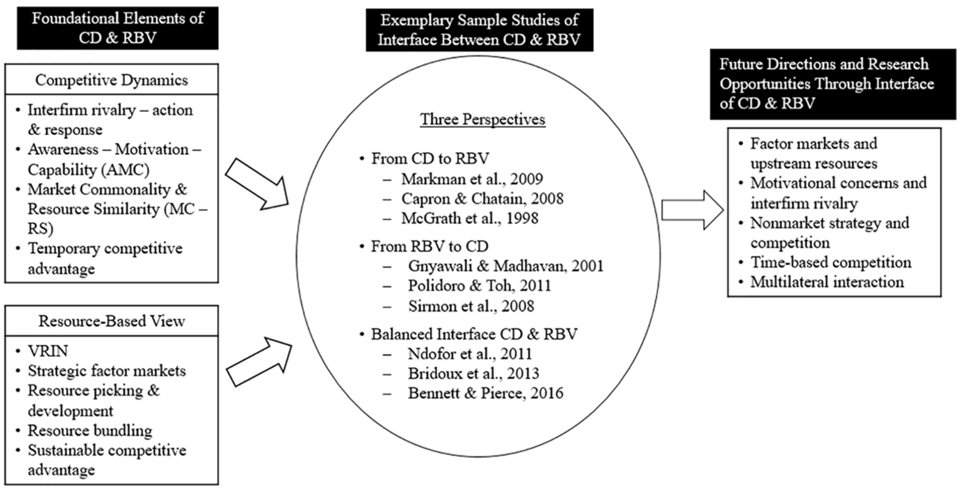
At nearly the same time, the RBV of the firm was developing, led by pioneering work by Wernerfelt (1984) and Barney (1986). Instrumental in the development of the RBV was the belief that strategic management inquiry had become too heavily weighted toward consideration of external market opportunities, at the expense of internal organizational capabilities. Renewed attention to the internal elements of the firm and its tangible and intangible resources allowed for the identification and consideration of idiosyncratic resource positions and firm heterogeneity as factors in abnormal market returns (Barney, 1991). Similar to CD, RBV focuses on firm behavior as orchestrated by managers' decisions and firms' agency in accumulating effective (or less effective) resource endowments.

Since their beginnings in the mid-1980s, both CD and RBV have progressed in the elaboration of their perspectives, the rigor and sophistication of their research, and their prominence in the strategy field. Indeed, by 1996 each had made sufficient intellectual progress to be recognized with best paper awards from prestigious journals: Miller and Shamsie (1996) from *Academy of Management Journal* (*AMJ*) for their resource-based examination of Hollywood studios, and Chen (1996) from *Academy of Management Review* (*AMR*) for his CD-based exploration of interfirm rivalry and competitor analysis. Today, CD and RBV are well-recognized "homegrown" subfields within strategic management.[1] While they have progressed independently, the paradigmatic differences between these two lines of work have not been investigated in-depth, though some studies, starting with Chen (1996), have attempted to link these two research arenas or subfields (Ndofor, Sirmon, & He, 2011; Sirmon, Gove, & Hitt, 2008). It is the interface between them that, we believe, deserves further attention. By "interface" we refer to the joint application and utilization of core conceptual elements of CD and RBV in facilitating understanding of firm behaviors and outcomes.

A basic premise of this paper, responding to the call of Chen and Miller (2012), is that the intellectual boundary of CD, considered here as the focal point of interest, can be expanded to permit exploration of promising new research ideas by investigating areas where these two prominent strategy subfields meet. This constitutes the focus of our manuscript. We believe there are wide-ranging research opportunities that can strengthen the contributions of not only CD but also the RBV, as well as strategy research in general.

We adopt this premise based on the following considerations. Nag, Hambrick, and Chen (2007: 944) inductively define strategic management as "the major intended and emergent initiatives taken by general managers on behalf of owners, involving utilization of resources,

Figure 1
Conceptual Overview and Progression of Interface Between CD and RBV



to enhance the performance of firms in their external environments." This definition emphasizes the *holistic* element of the firm and includes resources and external environments, both of which often play meaningful roles in rivalrous market engagements. Isolated consideration of either CD or the RBV gives an incomplete picture of the firm, both in terms of its internal capabilities and its contested rivalries, thus limiting our understanding of the firm and our ability to provide guidance to practitioners. Second, associative thinking, bringing together and integrating ideas that were largely unconnected, is a hallmark of creativity (Weick, 1989). Examining CD and RBV jointly offers the possibility for novel insights and enlightening avenues of research that might otherwise be ignored.

In so doing, our paper intends to make the following contributions. First, we apply a critical lens to CD and, to an extent, to the RBV of the firm to identify limitations, omissions, and blind spots. We ask questions that the extant research has left mostly unaddressed, often because of existing research norms and expediency. Second, in connecting CD and RBV, this paper formalizes a promising research domain that bridges two important subfields of strategy. Since Chen's (1996) first attempt at investigating the CD-RBV interface, many researchers have ventured into this domain, yet a systematic and comprehensive effort devoted to the topic has not been undertaken. Third, we address existing limitations associated with embodying elements of the RBV and highlight opportunities for further integration and future research progress in both CD and RBV. Lastly, by reviewing some of the research in the CD-RBV interface, the paper identifies several promising topical areas for strategy scholars, including motivational concerns in interfirm rivalry, nonmarket strategy, and CD in factor markets and/or for upstream resources.

Figure 1 highlights the overall schema and structure of the paper as we progress from separate considerations and limitations of CD and RBV, to extant studies embodying elements of interface, to future directions and research opportunities through the expansion of interface between these two subfields.

Conceptual Foundation

This section first highlights a few of CD's major theoretical thrusts and concepts, including the awareness–motivation–capability (AMC) perspective and integrative competitor analysis, which involves joint market and resource considerations. It then offers a critical review of the RBV of the firm, from the vantage point of CD. CD and RBV are compared within this context, and their key paradigmatic differences and possible theoretical tensions are highlighted. The section ends with a comparison of these two research streams along a number of theoretical considerations.

Core Theoretical Thrusts in CD

Two main cohorts of scholars were instrumental in the formative years of CD research (1985-1996). The first comprised a group of researchers at the University of Maryland led by their doctoral supervisors Ken G. Smith and Curtis Grimm (Ferrier, Smith, & Grimm, 1999; Young, Smith, & Grimm, 1996). Among the Maryland cohort was the first author of this paper, who later joined forces with co-authors and colleagues at various institutions to form the second group of pioneering researchers; primary among them were Danny Miller (Miller & Chen, 1994) and Don Hambrick (Chen & Hambrick, 1995).

CD researchers have made significant progress on multiple fronts over the past two decades. A number of papers provide a comprehensive review and/or overview of the field, including Chen and Miller (2012), Ketchen, Snow, and Hoover (2004), and Smith, Ferrier, and Ndofor (2001). Scholars have also expanded—both vertically (to upstream or downstream value creation activities) and horizontally (to other adjacent research arenas or subfields)—the original relatively confined focus on competitive action-response dyads or interfirm rivalries. A few examples of such expansion include consideration of innovation (Semadeni & Anderson, 2010), relational competition (Chen & Miller, 2015), and public communication (Gao, Yu, & Cannella, 2017).

AMC as the driver of competitive actions and responses. Building on Chen and Miller's (1994) application of Vroom's (1964) expectancy-valence model to study corporate competition, Chen (1996) put forward the AMC perspective in predicting competitive action and response. The idea is straightforward. Three factors determine if, and how, a given company will respond to a competitive action taken by a rival: the extent to which the firm is aware of the action[2]; the extent to which it is motivated to act (or respond), as action is likely to affect the firm's market and performance; and whether the company is capable of acting or responding.

A large number of studies have adopted this theoretical perspective or relied on elements of AMC in their theorization efforts. In a comprehensive review of the CD subfield, Chen and Miller (2012) identified at least 50 publications that included AMC concerns, either partially or fully, in their research. A few recent studies have enriched and expanded the reach and application of the AMC perspective. Gao et al. (2017), for instance, forged a theoretical link between linguistics and CD by evoking the AMC perspective, adding "word responses" to a firm's response repertoire. Others have utilized AMC to examine firm responses to implicit threats of investor activism (Shi, Connelly, Hoskisson, & Ketchen, 2020).

Given our paper's interest in expanding CD's conceptual boundaries and strengthening its intellectual connection with RBV, we should note that from the AMC perspective, capability, or the ability to mobilize and deploy for action, is rooted in firm resources, without which there can be no ability to act or respond in a competitive situation. Similarly, awareness, or the ability to recognize, identify, and "sense" opportunities for action/response, is embedded in a firm's resources, whether through organizational activities such as scanning ability, sales reps on the front lines, or data-driven analytics.

Integrative competitor analysis. CD and competitor analysis are two sides of the same coin. The former pertains to the exchange of market moves (or actions and responses), while the latter focuses on the relationship between rivals in the marketplace. Chen (1996) integrated two seemingly competing strategy paradigms, the RBV of the firm (Barney, 1991) and industry structure analysis (Porter, 1980), to advance a theoretical perspective that uses market and resource factors in competitor analysis to predict rivalrous engagements between firms. The paper proposed two firm-specific constructs, market commonality (MC) and resource similarity (RS). It also advanced the promising new concept of competitive asymmetry, which holds that two firms within a pair do not view their market-resource relationship equally, and as a result, it is important to take a rival-centric (in contrast to focal-firm–centric) view to conduct competitor analysis (Tsai, Su, & Chen, 2011).

Despite significant progress in CD research over the past three decades, there are notable limitations. The first is a lack of specificity with respect to the elements that constitute competitive action or response. Researchers have examined easy-to-measure constructs or variables, such as the volume of actions (Ferrier et al., 1999; Tsai et al., 2011), but have given considerably less attention to the particular content, or quality, of those actions. Second, the strategic decision-making process associated with competitive engagements has been mostly overlooked, with a few prominent exceptions including Luoma, Ruutu, King, and Tikkanen (2017); nor has the process of forbearance (Upson, Ketchen, Connelly, & Ranft, 2012) been explored in-depth, with the exception of Andrevski and Miller (in press). Third, with respect to the research context, there is an overreliance on single-industry studies and archival data.

Finally, factor market rivalry has hardly been examined, except for Markman, Gianiodis, and Buchholtz (2009), and similarly, nonmarket aspects of rivalrous engagement have been largely ignored. The oversight of these two important research topics in particular is where the RBV can contribute significantly in the future. Indeed, the CD line of work has been constrained by its proportionally greater attention to studying CD among firms that are characterized by existing MC (Baum & Korn, 1996; Chen, 1996). It has left underexplored competitive engagements in which RS is an important driver of interactive firm behavior despite low levels of MC. To play out fully the promise of the MC–RS framework, CD research needs to further explore this area with the integrative opportunity from RBV. As indicated in the section on future research directions, an important theoretical merit of the framework is that it is not confined by industry boundaries (Chen, 1996; Peteraf & Bergen, 2003); thus, it is amenable to the investigation of CD in broader arenas such as platforms (Zhu & Iansiti, 2012) and ecosystems (Adner, 2017).

A Critical Look at the RBV from CD

Building on Penrose's (1959) notion of the firm as a collection of bundled resources that could be deployed to yield valuable services to the organization, Wernerfelt (1984) brought the resource perspective into strategic management by highlighting superior resource positions, resource barriers, and financial returns. However, it was Barney's (1991) publication that more formally developed the RBV and led to its prominence as a flagship theory within strategic management. Dissatisfied with implicit assumptions that firms were homogenous in their resource portfolios and that resources were readily mobile across firms, Barney directed attention to the heterogeneity and idiosyncratic resource bundles and the relative immobility of resources across firms (Barney, 1991; Peteraf, 1993). The resulting VRIN (Valuable, Rare, Inimitable, and Nonsubstitutable) framework for analyzing resources and establishing sustainable competitive advantage has become ubiquitous within strategic management as evidenced in prior and forthcoming resource-based special issues in esteemed journals (see Barney, Chatain, Helfat, Kaul, Ketchen, & Singh, 2013; Barney, Ketchen, & Wright, 2011; Barney, Wright, & Ketchen, 2001; Hoopes, Madsen, & Walker, 2003).[3]

There have also been a number of critical reviews of RBV (Arend, 2006; Kraaijenbrink, Spender, & Groen, 2010; Priem & Butler, 2001), central to which is the viability of the framework as a defensible scientific theory (Bacharach, 1989). Examination of this issue is beyond the scope of the current paper, but recognition of limitations as well as strengths identified in the literature is a useful starting point for extensions and cross-fertilizations between the RBV and CD.

The core of the RBV model in its original incarnation has been largely static (Priem & Butler, 2001) with limited attention to boundaries, timing of value creation, and appropriation of rents. Extensions of RBV to include dynamic capabilities help address this issue and incorporate change and volatility more explicitly (Teece, 2007). They enable firms to navigate environmental change and alter their resource profile to better align with environmental dictates. In a related but different line of work, Helfat and Peteraf (2003) began the examination of how firms utilize resources dynamically across stages of the lifecycle: retrenchment, renewal, replication, and recombination. Recent RBV research has investigated how firms "redeploy" their resources "intertemporally" after a focal business division or location is affected by a shock (e.g., industry decline, or exogenous demand growth) (Lieberman, Lee, & Folta, 2017).

Despite criticism of limited dynamism, we note that significant empirical work embeds elements of environmental change and dynamism to alter the value of resources or resource investment decision. For example, Miller and Shamsie's (1996) study of Hollywood studios revealed a disparity in resource value depending on whether the environment was stable with strong studio control or dynamic with weakened control. More recently, resource investment decisions in renewable energy technologies have been shown to be influenced not just by the firm's existing resource base but also by regulatory mandates and rivals' investments (Weigelt & Shittu, 2016). Priem and Butler (2001) argue that for RBV to realize its full promise it must be more deeply integrated with changes in environmental demand. While RBV has certainly progressed on this front, CD with its orientation toward external markets, rivals, and the volatility of actions may further enhance dynamism within RBV.

Kraaijenbrink et al. (2010) claimed that RBV is characterized by a neoclassical economics equilibrium model, while in many instances disequilibrium is called for (Foss & Ishikawa, 2007). Isolating mechanisms, immobility of resources, and sustainable competitive advantage lead to equilibrium, albeit an equilibrium that differs from traditional microeconomics of perfect competition. Integration with CD and its base in Austrian economics is warranted to further move RBV in a more dynamic direction.

One challenge to RBV relates to the definition of resource and its all-encompassing inclusiveness (Kraaijenbrink et al., 2010; Priem & Butler, 2001). Both Barney (1991) and Wernerfelt (1984) offer highly inclusive definitions. As an example, "firm resources include all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc., controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness" (Barney, 1991: 101).

This inclusiveness causes problems for theoretical precision as "there is nothing strategically useful associated with the firm that is not a resource" (Kraaijenbrink et al., 2010: 358). However, in practice, well-executed studies have offered significant specificity in identification of resources (Ndofor et al., 2011; Polidoro & Toh, 2011; Sirmon et al., 2008). Moreover, emerging typologies for resource classification that offer further progress are developing (Sirmon, Hitt, & Ireland, 2007). Importantly, we see these resource-based elements and the careful and creative attention to their identification as an opportunity for CD. As described earlier, the specific content of competitive actions has been given inadequate attention, and the nuanced details displayed by resource-based researchers may enrich the understanding of CD content.

A final challenge leveled against RBV is that by imputing value to the causal resource and the firm outcome, the primary assertions are axiomatically true by logic and definition (Barney, 2001; Priem & Butler 2001). Among the various works to assess and modify this disputable issue, Kraaijenbrink et al. (2010) propose that resources and capabilities should be conceived as capacities that enable firm actions. Thus, the RBV focus on acquiring and developing resources and capabilities (capacity) is retained, while also addressing the processes of deploying that capacity in firms' actions (Kraaijenbrink et al., 2010). Coincidently aligning with the objective of this paper, such a perspective merges RBV's internal orientation with CD's external market-interaction orientation.

CD vs. RBV of the Firm

Table 1 highlights key perspectives and distinctions among the RBV and CD. From their earliest days as the subfields evolved, their central foci and attentions were meaningfully different. CD focused externally on interfirm rivalry and competitive interaction, while RBV focused internally on resource endowments, resource development, and orchestration (Sirmon, Hitt, Ireland, & Gilbert, 2011).

The two subfields also differed significantly in their treatment of competitive advantage, the ultimate objective of competition. RBV regards competitive advantage as inimitable and sustainable (Barney, 1991), while CD views gains as temporary or transitory, consistent with its focus on competitive initiatives and disruption and the premise that any advantage will eventually be imitated or negated by opponents (Chen, 1996). The ultimate goal of competitor analysis is to predict the opponent's response, as the rival's reaction is a determinant of the length and strength of any competitive advantage.

By way of further delineation, RBV has been recognized as fundamentally theorized from neoclassical economics and immobility of resources (Foss & Ishikawa, 2007), while CD is oriented more toward market process associated with its Austrian economics perspective (Young et al., 1996). A critical component of RBV is equilibrium analysis, where theorists compare an economic system's actual state and equilibrium to predict the dynamic changes over time (Barney, 2001). In contrast, CD is interested in how the firm behaves (acts or

Table 1
Comparison of Central Elements Between Competitive Dynamics and Resource-Based View

Central Elements	Competitive Dynamics	Resource-Based View
Focus of attention	External market	Internal organization
Competitive advantage	Transitory	Sustainable
Market functioning (status)	Market process	Equilibrium outcome
Strategic factor market	Limited attention	High importance
Epistemological stance	Critical realism (macro–micro interaction)	Positivism (causal mechanism)
Configuration	Repertoires of action streams	Bundled resources
Theoretical foundations	Behavioral and Austrian economics	Neoclassical economics
Level of conceptual development	Emerging perspective	Theory

reacts) in the dynamic and fast-changing market process. As mentioned earlier, given its focus on the importance of heterogeneous resources, the RBV has directed significant attention to strategic factor markets (Barney, 1986; Capron & Chatain, 2008). Issues such as resource-picking to identify undervalued resources (Makadok, 2001) and decisions on whether to acquire resources in strategic factor markets or pursue internal resource accumulation have been well addressed (Barney & Tong, 2004; Maritan & Peteraf, 2011). CD, with limited exception, has focused on end markets and less so on intermediate factor markets and would benefit from better integration with this element of the resource-based perspective.

The epistemic roots of RBV and CD also differ, with the former premised on positivism, emphasizing the causal mechanisms among various constructs (Johnson & Duberley, 2000). CD, on the other hand, embraces a critical realism concentrated on understanding the strategic choices during macro–micro interactive processes (Chen & Miller, 2015).

Interestingly, CD and RBV both utilize configurational elements in their work, but in different ways. CD focuses on configurations of rivalrous action repertoire streams, examining repertoire attributes such as simplicity and sequencing (Ferrier & Lee, 2002). The repertoire approach provides a strategy toolkit suitable for the study of competitive inertia, simplicity of competitive action types, and the extent to which such strategy configuration is consistent with industrial norms (Miller & Chen, 1996). By contrast, the RBV focuses on configuration or bundles of resources (Sirmon et al., 2008). The building block for RBV in this regard is the acquisition and control of both tangible and intangible assets, and firms are expected to maximize their profits by utilizing resources that meet VRIN conditions (Barney, 1991).

Lastly, with regard to each subfield's level of conceptual development, we see CD as an emerging perspective with near theory level of development for aspects such as the AMC perspective of competitive actions (Chen, 1996). RBV has established itself as one of the most prominent theories in management (Barney et al., 2011).

The CD–RBV Interface: Research Illustrations

We begin our exploration in 1996, since, as mentioned above, this was the year that articles in both CD and RBV (Chen, 1996; Miller & Shamsie, 1996) received best paper awards from prominent journals (*AMR* and *AMJ*, respectively), demonstrating intellectual progress and academic acceptance of these subfields. As also noted, Chen (1996) was among the first explicitly to connect and integrate CD and RBV, an interface addressed by studies in the ensuing decades. This section will identify major publications related to the CD–RBV interface domain and inductively and selectively identify findings and observations that may serve as the springboard for answering one question: *How can future CD and RBV research be enriched by the investigation of this interface*?

The extant scholarship that embeds the joint application and utilization of core conceptual elements of CD and RBV aims to facilitate deeper understanding of firm behaviors and outcomes, which indeed is the *raison d'etre* of strategic management as an academic field (Nag et al., 2007). To identify research in the CD–RBV interface arena, we conducted a limited, semi-systematic search using *Web of Science* and *EBSCO* in major journals in which strategy scholars tend to publish their papers, including *AMJ*, *AMR*, *Journal of Management* (*JOM*), and *Strategic Management Journal* (*SMJ*). In addition to relying on our intimate knowledge of these two well-noted strategy subfields, we also conducted a keyword search to build our research "database," which includes both theoretical and empirical studies. As an example, for CD, the terms included "competitive dynamics," "interfirm (or competitive) rivalry," "competitor analysis," and "competitive action (or response)," and for RBV, "resource based," "resource," "dynamic capability," or "capability." The following review and analysis are based on the 20-some papers that make up our database.

Moreover, our general review of these "sample" papers indicates that three broad categories seem to emerge, capturing intuitive sense. Some papers take the CD perspective, others are grounded in the RBV, and still others approach this topic from both CD and RBV viewpoints. Thus, our discussion below is based on these three categories, namely, (1) from CD to RBV, (2) from RBV to CD, and (3) from CD–RBV to managerial decisions and firm performance.

Importantly, for this categorization process, while competitive action and response may constitute the core of the CD perspective (Smith et al., 2001), our intent is to capture and include broader elements of CD that are well recognized within the literature, such as competitor identification (Livengood & Reger, 2010; Tsai et al., 2011), MC (Baum & Korn, 1996; Chen & Miller, 1994), and competitive repertoire (Ferrier & Lee, 2002; Miller & Chen, 1996), among others. Similarly, for RBV, while Barney's (1991) VRIN framework is central to the RBV, our intent is again to be broader and capture those elements that are well established within the RBV literature, such as strategic factors (Barney, 1986), resource bundling (Sirmon et al., 2008), resource orchestration (Sirmon et al., 2011), and resource picking (Makadok, 2001), to name a few. Each category will be discussed and explicated below with the intent of offering additional depth and insight into the multiple ways researchers have approached the CD–RBV interface. Doing so not only documents the imaginative integration of CD's external orientation with RBV's internal positioning but also sets the stage for considering omissions and opportunities for future research that informs both.

The section will conclude with directions for future research and identification of bridging mechanisms that can advance studies not only in the CD–RBV interface but in the CD and RBV domains as well.

From CD to the RBV of the Firm

Studies in this category approach the interface with elements of CD leading to or shaping a firm's resource base and potentially its competitive advantage. Notable in this category is research examining rivalry over resources (e.g., Capron & Chatain, 2008; Markman et al., 2009). Common among these papers is how CD's external rivalrous perspective is utilized to enhance a firm's resource position or shape rivals' resource deployment and potential for scarcity rents, not through internal organic resource development but through competitive interaction. In this set of articles, the most salient idea is that the conceptual value of redirecting attention away from an exclusive focus on product-market interactions to competition over resources is significant and benefits from integration with the RBV. To put it differently, the elements of CD could be taken as antecedents of RBV-relevant outcomes.

As an example, McGrath, Chen, and MacMillan (1998) apply a CD perspective to examine how a firm's various strategies (such as thrust, gambit, and feint) act as a means to influence its rivals' resource allocations. In this view, the intent is not solely to enhance the focal firm's resource position nor to attack and appropriate or degrade a rival's resources but rather to influence the deployment of the rival's resources in a manner that is more favorable and less threatening to the focal firm. The idea of competitive actions to shape a rival's resource deployment is particularly applicable in the presence of heterogeneous customer segments, geographies, or spheres of influence in multipoint competition (Gimeno & Woo, 1996).

Markman et al. (2009) posit that rivalry over resources may be particularly intense for resources that are versatile (multiple uses) and mobile (transferable and quickly deployable). Such resources bring into contestation a wide variety of firms with varying product-market portfolios. Recent battles over airwave spectrum offer an illustrative example, as industries from agriculture to telecommunications compete for advantageous positions (Reid, 2020). Such resource rivalry may shape competitive advantages for a decade or more. As another example, Capron and Chatain (2008) argue that firms attack the resource position of rivals with the intent to increase their own scarcity rents. To sum up, the majority of prior CD research involves an implicit assumption of product-MC. By moving the focus upstream to competition over resources, the condition of MC can be relaxed, thereby broadening the examination of CD.

From RBV to CD

A number of studies that enrich our understanding of the CD–RBV interface are anchored in RBV. Researchers have investigated how a firm's resource base influences attributes of its CD-oriented behaviors such as competitor identification, likelihood of competitive interaction, and the success of such engagements. Much of this research aligns with Chen's (1996) AMC framework for competitive action/response. In this perspective, for a rivalrous move to occur a firm must have the resources and capabilities to engage competitively, after becoming aware of an opportunity to act, and have the motivation to engage such that it identifies an advantage or neutralization of a threat. Convergence of the RBV with AMC enriches our knowledge of how resources can facilitate successful competitive interaction.

Grounded in the RBV, Peteraf and Bergen (2003) offer a framework for scanning dynamic landscapes that includes elements of both resource- and market-side analyses. Notably, they draw attention to resource substitution as influencing not only the sustainability of competitive advantage but also its initial attainment, as it is not scarcity of the resource type that confers value but rather scarcity of resource functionality. The ideas of resource functionality and resource equivalency add precision to RBV and insight into competitive advantage while also reinforcing competitor identification and evoke a series of studies connecting RBV with competition. Polidoro and Toh (2011), for instance, argue that the competitive landscape (reflected by the substitution threat imposed by competitors) could change the focal firm's motivation to deter resource imitation. This set of articles directly relates firms' relative resource positions and capabilities to the likelihood of competitive action, competitor identification, and outcomes in competitive engagements. Namely, in this perspective, the elements of RBV could be treated as CD-related outcomes.

Gnyawali and Madhavan (2001), as another example, extend the study of CD–RBV interface by developing a multilevel conceptual model that relates key elements of social network to competitive action and response. They argue that a firm's centrality, structural autonomy, structural equivalence, and density define its structural embeddedness and its position in network, which in turn can provide resources on which the firm may draw, such as asset flows, information flows, and status flows. Firms that are well positioned in network can tap these resources (such as earlier access to higher quality nonredundant information that rivals may lack) for an increased capability of competitive action and decreased likelihood of competitive response. Importantly, it should be noted that the resources highlighted in the extant studies offer differential advantages for firms but may not necessarily meet the conditions of VRIN.

Lastly, in this section, we direct attention to the study of Sirmon et al. (2008). While resources are central to RBV, often overlooked is the importance of bundling and deployment of resources. Here, focus is directed to "resource management as the comprehensive process of structuring a firm's resource portfolio, bundling resources to build capabilities, and leveraging those capabilities to realize a competitive advantage" (Sirmon et al., 2008: 922). For a given level of resources, managerial agency and effectiveness in bundling and deploying these resources enhances the outcomes of dyadic competition, as tested in a series of Major League Baseball games. We see the direct progression from resources and their deployment to advantages in competitive engagements, highlighting the importance of implementation in translating valuable assets into a competitive edge in rivalrous interactions. Or simply put, resources and their deployment may be turned to advantage through competitive actions.

From CD–RBV Concerns to Managerial Decisions and Firm Performance

The third category of studies approaches the CD–RBV interface in a relatively balanced and integrative fashion. Connecting this work is researchers' shared concern for managerial decisions (and actions) and/or organizational performance, which for the empirical studies are often considered as "outcome variables."

Bennett and Pierce (2016), for instance, examine the increasingly common settings whereby firms are both complementors and competitors. Drawing on RBV, they find that the firm capabilities perspective helps explain relative market share differences in automobile leasing. But, going further, they introduce the AMC framework for competitive action to demonstrate that while the pure capabilities perspective has explanatory power, the inclusion of motivational elements significantly enhances results of the study.

Bridoux, Smith, and Grimm (2013), utilizing CD and RBV, take a first step in investigating the temporal effects of different types of resource management actions on performance in the aviation industry. Actions in product markets have the fastest effect on performance, they discovered, but the shortest duration, whereas actions bundling resources have a delayed effect on performance but the longest duration. Ndofor et al. (2011: 641) found that patented technological resources in the *in vitro* diagnostics industry are leveraged through competitive action complexity and deviance, which in turn enhance performance. Namely, they propose a mediated model as competitive actions influence the relationship between technological resources and firm performance. This work highlights the significance of an integrative perspective by which firms' competitive actions help render advantaged resource positions into superior performance.

In a recent study within the context of renewable energy, Weigelt and Shittu (2016) integrate competitive factors, resource attributes, and nonmarket regulatory policy. They show that competitive factors such as rivals' investments influence the focal firm's new resource investments as it attempts to avoid falling behind or missing innovative technologies that become widespread. In addition, the similarity of the new resource to the focal firm's existing resource base plays a role, as do nonmarket factors such as regulatory mandates that dampen the influence of a rival's investment on the focal firm actions.

Future Research Directions and Implications

As indicated above, extant scholarship has made some significant inroads in connecting (and to some extent, integrating) CD and the RBV. Yet there are important opportunities to advance a holistic understanding of firm behaviors and outcomes by linking the two fields of study more closely. We highlight five areas that demonstrate some noted omissions as well as research opportunities that would benefit the CD–RBV interface research: (1) motivational concerns in interfirm rivalry, (2) CD in factor markets and/or for upstream resources, (3) nonmarket strategy and competition, (4) time-based competition, and (5) multilateral interaction.

Motivational Concerns in Interfirm Rivalry

AMC is well recognized as the joint determinants of competitive behavior. Thus, a focal firm's awareness and motivation to engage in competitive action is affected by its particular set of capabilities as well as its target rival's competencies (Chen, 1996; Ndofor et al., 2011). Given that capability falls under the nomenclature of "resource" in CD, AMC *per se* is a natural bridge to connecting CD and the RBV. Apart from the relationship between RBV and the capability component of the AMC framework, the motivation component may also be closely related to or affected by resources. Motivation concerns within CD have traditionally been captured by the degree of market dependence on a revenue stream or market overlap with rivals (Baum & Korn, 1996; Chen, 1996; Chen & Miller, 1994). As important as this is, it may be limiting. A firm's resource portfolio or endowment may also motivate offensive and defensive competitive behaviors.

Both a firm's corporate portfolio and extended supply chain may align with the RBV and shape motivation for competitive behavior. As an example, in the automobile leasing market, firms that are financial subsidiaries of manufacturers possess different motivations and employ a different calculus in their competitive decisions relative to the independent, non-captive leasing firms (Bennett & Pierce, 2016). Importantly, this motivation is unrelated to traditional CD research in multimarket competition (Gimeno & Woo, 1996). There is no inference of mutual forbearance or spheres of influence, for example, but rather that resource dissimilarity as reflected in extended supply chains is motivating behaviors in a single market. More broadly, we see the possibility for further contributions in corporate-level strategy that integrate resource-based positions with motivations for competitive behaviors at the market-based business level.

Beyond the close-in market-based elements and the broader corporate-level portfolios, a few theoretical papers highlight the psychological attributes of motivation (Kilduff, 2019; Livengood & Reger, 2010). In fact, additional opportunities to investigate the integration of CD and the RBV through the AMC framework could be gained through consideration of the psychological attributes of motivation. Among these, firm identity and emotions, which are often embedded in history, traditions, and resources (Blombäck & Brunninge, 2009), remain underexplored for their academic importance. It should be noted here that basic constructs, such as identity and emotion (e.g., Livengood & Reger, 2010), often span multiple analytical levels. Beyond economic-based elements on market and corporate portfolio, psychological and sociological elements are also important: The former speaks to the individual level, while the latter refers to firm and/or institutional logics. Challenges or alterations that call into question these traditions or identities may provoke powerful responses (Kilduff, 2019), as emotions are adaptive reactions to changed context (Moors, Ellsworth, Scherer, & Frijda, 2013).

Recognizing that resources, often accumulated through a path-dependent process, have meaning, identity, and emotion brings the human factor back into decision-making as an important motivational element frequently left aside. For instance, a focal firm's accumulated reputation, as an important intangible resource, will surely affect its strategic decision-making (e.g., competitive action or response) in consideration of emotion. In addition, the cutting-edge technologies or inventions that a focal firm seeks to obtain could also exert much consequential influence on its competitive behaviors, in view of emotion. Therefore, the incorporation of emotion and firm identity into competitive motivational elements will not only enhance the theoretical potency of the AMC framework but also enrich the integrative understanding of CD and the RBV.

CD in Factor Markets and/or for Upstream Resources

As noted in our literature survey, CD researchers have largely neglected factor markets and upstream resources, in the pure RBV-based context. This may be due to the challenge of data acquisition and the need for less direct mental models of competition in this area, as competitive interactions in upstream activities are typically more opaque and potential contestants may exist beyond "the usual suspects." Although a handful of theoretical articles draw attention to this area and raise various intriguing propositions (e.g., Capron & Chatain, 2008; Chen, 1996; Markman et al., 2009), there has been disproportional effort to advance this line of research on the empirical side.

CD in upstream resources can in fact be very different from what is typically seen in downstream activities. For instance, the majority of multimarket contact research (Gimeno & Woo, 1996), an important part of CD, that has been conducted on downstream activities in product markets shows that firms benefit from less rivalry. However, when the focus of multimarket contact switches to upstream resources, the results are squarely opposite: Multimarket contact can intensify rivalry in upstream resources, as there is less of a deterrent retaliation threat (Theeke & Lee, 2017). What's more, acquisition behaviors in the technology realm, such as Apple's hiring of Google's head of research and artificial intelligence (Nicas & Metz, 2018), could be of resource-based competitive intent. Gardner (2005) is one of the earlier researchers in CD who recognized the importance of competing for human resources. In order to build its own resource base, a focal firm may involve itself in a bidding war for acquiring companies with valuable resources and capabilities. As an example of the RBV literature on mergers and acquisitions as a means to strategically acquire employees, Younge, Tong, and Fleming (2015) examined when employee mobility can affect firms' M&A activities to acquire human capital. The efficacy of such competitive behaviors in upstream resources, however, can be very different from those in downstream activities (e.g., new product launch, price cut), as the former is typically of a longer term orientation. Indeed, as upstream resources become more intangible, undetectable, and even incomprehensible in today's competitive environment, a focal firm may try to leverage such resources to gain a competitive edge. Certainly, we can imagine rich possibilities for expanding our understanding of CD and RBV through future research that seeks to integrate elements of both these essential subfields of strategic management.

Nonmarket Strategy and Competition

Nonmarket strategy is another area where CD and RBV can jointly reveal promising insights (Weigelt & Shittu, 2016). Referring to the "social, political, and legal arrangements that structure a firm's interactions outside of, and in conjunction with markets" (Baron, 1995: 48), nonmarket strategy is about managing the wider institutional context comprising corporate political actions (CPA), corporate social responsibility (CSR), activist shareholders, and social movements. While exploration of each of these is beyond the scope of this paper, we note the significant role resources play, either implicitly or explicitly, in nonmarket strategy.

Revisiting Barney's (1991) idea of social complexity, investments in cultivating relationships with regulators or policymakers can constitute valuable, idiosyncratic resources that may lead to economic rents. Indeed, corporate political activity expenditures and lobbying efforts, often disguised or obscured, have long been recognized as value-creating activities (Hillman, Keim, & Schuler, 2004). However, the role of resources in nonmarket strategy extends beyond relationships in the institutional environment to the resource portfolio and resource dissimilarity with rival firms (Chen, 1996). These heterogeneous resource positions by rival firms enable regulatory policy, taxes, and subsidies to differentially benefit or harm firms as they jockey in nonmarket contests to raise rivals' costs (McWilliams, Van Fleet, & Cory, 2002).

This consideration is especially salient in the global context, where competitors often act/react differently because of their cultural and institutional disparity (Jackson & Deeg, 2008). While typically this is envisioned within the government sector, opportunity exists to explore the topic more broadly in other institutional contexts: for example, social movements where mobilization may differentially affect firms, such as the Sierra Club's Beyond Coal Campaign or Tesla's battle with state regulations against direct sales (Orozco, 2016).

Research in the interface of CD and RBV promises to further enhance the burgeoning work in nonmarket strategy (Mellahi, Frynas, Sun, & Siegel, 2016). As an illustrative example of this potential, we note the work by Holburn, Raiha, and Rao (2020) and their examination of nonmarket strategy by incumbents and new entrants in the ridesharing industry. In contrast to most lobbying research that examines the dyadic relationship between firms and politicians, their work goes further, to consider the competitive element of political activities.

They note the asymmetry of political resources between incumbents and new entrants and how it leads to pursuit of different lobbying strategies that target legislator ideology and other characteristics in rivalrous actions to achieve policy outcomes conducive to firm interests (Holburn et al., 2020).

Time-Based Competition

Advancing the time-based strategy and competition line of research offers the possibility of juxtaposing paradigmatic differences between CD and the RBV, with CD being in the realm of temporary advantages and the Austrian school and RBV occupying the domain of durable advantages and sustainable competitive edge. For instance, product-market actions align squarely with CD and its Austrian roots emphasizing disruption, disequilibrium, and temporary advantage (Chen, Lin, & Michel, 2010), whereas resource picking, capability building, and resource bundling actions fit most closely with RBV and its grounding in long-lasting, sustainable advantages (Bridoux et al., 2013; Makadok, 2001).

Within CD research, scholars have given attention to time-based elements of strategy and competition such as action response time (Yu & Cannella, 2007) and competitive action sequencing (Ferrier & Lee, 2002; Rindova, Ferrier, & Wiltbank, 2010). RBV scholars' interest has also been drawn to elements of dynamics and time-based strategic and competitive concerns such as structuring the resource portfolio, bundling resources, and leveraging capabilities for value creation (Sirmon et al., 2007). In an effort to better understand firm growth over time, scholars have investigated whether VRIN-based resources or versatile Penrosean resources contribute more to firm growth (Nason & Wiklund, 2018). Moreover, Pacheco-de-Almeida and Zemsky (2007) examined time-based competition in the RBV tradition through the lens of time-compression diseconomies.

In a series of articles, Sucheta Nadkarni and colleagues explored important facets of time-based competition anchored in CEO temporal focus and disposition (Chen & Nadkarni, 2017; Nadkarni & Chen, 2014; Nadkarni, Chen, & Chen, 2016). One manifestation of this was the extent to which CEOs devoted attention and focus to past, present, and future time frames. Results showed that CEO temporal elements were associated with firms' propensity for new product introductions, competitive aggressiveness, and corporate entrepreneurship. While the CD and RBV studies mentioned above introduce elements of time-based competition, they do so tangentially and less centrally than the Nadkarni work. The timing and urgency and the longevity of resource decisions are central to strategic management. The time horizon of executives' focus and the immediacy of needed results will shape both tactical and strategic decisions. To supplement this line of work, Zhong, Ma, Tong, Zhang, and Xie (2020) examine empirically the impacts on firm innovation of CEOs' temporal attention.

To date, neither CD nor RBV has adequately embraced time-based actions that focus on building future competitiveness, and yet by combining both perspectives, there exists opportunity for conceptual and empirical advancement. Although Kilduff (2019) has tackled time-based competition by tracing the rivalry relationship over historical time, the literature remains silent on how firms compete to accumulate resources for future markets. As one illustration, we note that Apple and Alphabet in recent years have engaged in numerous acquisitions and investments solely within health technology (Azevedo, 2019). Most have been small with limited market presence; the alleged intent has been the acquisition of emerging resources and technologies to support longer term ambitions (CB Insights, 2019). Yet simultaneously there are interactive, rivalrous skirmishes and battles as these firms contest acquisitions and desirable partners and pursue immediate revenue opportunities. Both CD actions and responses as well as the idiosyncratic resource-building perspective of RBV may prove fruitful in understanding the process of future-oriented strategic positions.

Multilateral Interaction

In addition to the four areas of research discussed above, there is another promising direction, this one on the farther reaches of the prospective research terrain and more general in its nature, which broadly encompasses such topics as "network- (or platform-) based competition" (Zhu & Iansiti, 2012) or "ecosystem-based competition" (Adner, 2017). Indeed, competition increasingly takes place as "group vs. group," using the earlier alliance literature's terminology (Gomes-Casseres, 1994), or "network vs. network" (Medlin & Ellegaard, 2015) and "platforms vs. platforms" (Rochet & Tirole, 2003). That is, CD may go beyond the firm-dyadic level, involving multiple players and spanning various organizational (and/or analytical) levels and arenas. Yet despite the seeming complexity of interactions, the basic premises that differentiated CD more than 30 years ago continue to hold true in this new era.

From its inception, CD has not been confined, for instance, by "industry" boundaries, in contrast to its intellectual predecessor, industry-structure analysis (Porter, 1980). Consequently, it is amenable to investigating interfirm competition (and interrelationship between firms) in broader contexts and arenas. Indeed, CD, with its empirical roots at the firm-dyadic level, began its scientific endeavor by studying *interaction* (or action-response) between firms and progressed from this line to investigate *interrelationship* between firms as part of integrative competitor analysis. While three decades of research development enlarging the scope and even transmuting the nature of CD has made it somewhat difficult to delineate the banks of this research stream today, the basic focus on interaction-interrelationship remains unchanged.

Exactly because of this constant center, CD allows for exploration of a variety of forms of competition across a range of arenas and analytical levels. Within this context, the market-commonality/resource-similarity framework (Chen, 1996) is particularly salient, not only because of its CD–RBV integration but more importantly because of the promise of revising basic concepts of market and resource. For instance, a promising opportunity for CD is to explore, by redefining "market" boundaries (as in fintech and mobile technology), a set of important emerging phenomena such as industry convergence and/or the formation of a diverse range of competitors that emerged from very different "markets" and are endowed with sharply different "resources."

After all, to talk about competition, one needs first to consider, specifically, the definition of "market" and "competitor" (or whom to compete with) as well as various forms of resources. This is one of the main merits of CD: Because it is not limited to predefined markets, it permits researchers to delve into "firm-specific" competition. The same reasoning may be extended to RBV, as reflected in such constructs as MC and RS, or pair-wise competitor analysis and its philosophical foundation in "duality and relativity" (Chen & Miller, 2012, 2015).

As a result, it is not only, for instance, the focal firm's resources that matter to competitors but also the resources of the focal firm's partners in the broader "ecosystem" (vertical/horizontal partners, suppliers/customers, complementors, etc.) and "network" (social ties, information flows, knowledge transfers, etc.). Under this inclusive theme, several subfields can be incorporated, such as "co-opetition" (Gnyawali & Park, 2009), competition network, and ecosystems (Adner, 2017). The ecosystem literature, as an example, so far has focused more on collaboration and much less on competition, but clearly rivalry between, say, Apple and Google (and, specifically, their operating systems iOS and Android) centers on platforms and ecosystems.

In conclusion, this paper has explored potentially new points of connection and interplay between CD and the RBV of the firm, two discrete strategy subfields of ongoing and rising interest to scholars. CD's focus is outward-looking, concentrating on interactions—moves and countermoves—between firms in the marketplace. RBV's concern is with the firm's internal organizational capabilities, and therefore, it focuses on the study of tangible and intangible firm resources. In this paper, we were interested in delineating new, expanded boundaries of CD to overlap with the intellectual domain of RBV. We discovered that the two worlds may not be so far apart and that undertaking further border-stretching research should yield new intersections between these essential areas of strategic management.

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Notes

1. Relative to other management subfields (such as organizational behavior and human resources), strategic management did not become an area of focused scientific research by macromanagement scholars until the 1970s. The Pittsburgh Conference in 1977 marked the formation of this new academic field (Hambrick & Chen, 2008). In the early years, key research ideas, theories, and methods were mainly "imported" from fields such as industrial organization economics (e.g., Porter, 1980) and marketing. CD and RBV of the firm, along with the top management team (TMT) and upper echelons lines of work (Hambrick & Mason, 1984), were pioneered in the mid- to late '80s. Each of these three "homegrown" strategy subfields or research arenas was initiated by a new group of scholars who developed a research paradigm that appeared to be quite different from the academic fields that influenced strategic management in the 1970s.
2. There is also a growing strategy literature on cognition (e.g., Du, Li, & Wu, 2019) that can be linked to CD, particularly the awareness aspect of the AMC perspective. Questions arising from this research thrust include the extent to which cognitive bias relates, directly or indirectly, to a firm's awareness in a competitive situation.
3. It is worth noting that Barney's 1991 paper has an astounding 78,000 citations in Google Scholar as of this writing.

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