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IS THE RESOURCE-BASED "VIEW" A USEFUL PERSPECTIVE FOR STRATEGIC MANAGEMENT RESEARCH?

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As a potential theory, the elemental resource-based view (RBV) is not currently a theoretical structure. Moreover, RBV proponents have assumed stability in product markets and eschewed determining resources' values. As a perspective for strategic management, imprecise definitions hinder prescription and static approaches relegate causality to a "black box." We outline conceptual challenges for improving this situation, including rigorously formalizing the RBV, answering the causal "how" questions, incorporating the temporal component, and integrating the RBV with demand heterogeneity models.

The popularity of the resource-based "view" (RBV) of strategic management is manifest in its rapid diffusion throughout the strategy literature. Yet, there has been little critical evaluation of the RBV as a theoretical system (see Ryall, 1998, for an exception) or of its potential contributions to strategic management (see McWilliams & Smart, 1995, for an exception). In this article we attempt to restrain, at least briefly, the RBV's momentum while encouraging efforts to clarify its fundamental theoretical statements and to specify its likely contributions to knowledge. We take an initial step toward a more rigorous critique and hopeful clarification of the RBV by addressing two elemental questions: (1) Is the foundational and unembellished RBV actually a theory? (2) Is the RBV likely to be useful for building understanding in strategic management?

Sociologists have shown that inquiries into the status of ideas—as in the first question above, concerning the theoretical status of the RBV—are important to scientific progress. This is because groups of adherents sprout up around certain concepts. Such linked individuals, called "invisible colleges" by Crane (1972), influence the direction of graduate education, the distribution of research funding, and the research agenda itself. Yet, these individuals have vested interests in the propagation of "their" concept. Thus, periodic critical examinations of the ideas underlying fashionable research genres might be warranted to ensure maximum returns from research effort. This might be particularly true for developing academic fields, such as strategic management.

The second question we address—concerning the usefulness of the RBV for strategic management—is important, because new perspectives tend to be better suited toward answering some issues rather than others. Identification of these high-potential issues might help to direct theory building and research while simultaneously clarifying the potential contributions of the RBV to the strategy field.

We approach these questions as follows. First, we evaluate the degree of diffusion by the RBV throughout the strategy literature using the eighteen strategy research topics identified by Schendel and Hofer (1979). We then examine the basic RBV framework, as proffered in Barney's (1991) expository article, to see if it satisfies key requirements for theoretical systems (e.g., McKelvey, 1997; see also Bacharach, 1989; Dubin, 1976; Hunt, 1991; Rudner, 1966; Thomas & Tymon, 1982; Whetten, 1989). Thus, the analysis is undertaken from a logical positivist rather than postpositivist perspective. We pay particular attention to such issues as determining the analytic

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or synthetic nature of statements in the RBV, the logic of the RBV, and the RBV's aptness for strategic management given the key characteristics of the strategy discipline (e.g., Meyer, 1991). Next, we examine RBV-driven research to determine the extent to which it has contributed to theory building in strategic management and, for empirical papers, how the RBV has been tested. Finally, we develop suggestions from these analyses for productive directions in future resource-based strategy research.

DEFINITION AND DIFFUSION OF THE RBV

Wernerfelt's (1984) conceptual article entitled "A Resource-Based View of the Firm" recently was selected as one of the most influential papers published in the *Strategic Management Journal* prior to 1990 (Wernerfelt, 1995). The article begins with the statement, "For the firm, resources and products are two sides of the same coin" (1984: 171). Wernerfelt then goes on to analyze, from a resource perspective, the efficacy of sequential entry strategies for diversifying firms. One major contribution of this article was to direct strategy scholars back toward resources as important antecedents to products and, ultimately, firm performance. In early conceptual work in strategic management, scholars generally had given equivalent attention to firm strengths and weaknesses versus the opportunities and threats in the competitive environment (e.g., Andrews, 1971; Ansoff, 1965; Learned, Christensen, Andrews, & Guth, 1965). The publication of Porter's (1980) influential book, *Competitive Strategy*, shifted the emphasis toward external, industry-based competitive issues. Wernerfelt's (1984) article served as a reminder that both strategy scholars and "managers often fail to recognize that a bundle of assets, rather than the particular product market combination chosen for its deployment, lies at the heart of their firm's competitive position" (Dierickx & Cool, 1989: 1504).

Rumelt (1984), Barney (1986, 1991), Dierickx and Cool (1989), and others have contributed to the subsequent development of the RBV of strategic management. The conceptual work in this stream generally has focused on the characteristics of firm resources that can contribute to a sustainable competitive advantage. Some theorists have followed Penrose (1959) quite closely, emphasizing how resources contribute to diversification and how diversification must match the "core competencies" of the firm for optimal performance (e.g., Peteraf, 1993; Prahalad & Hamel, 1990; Wernerfelt, 1984; see Ryall, 1998, for a discussion of this approach). Penrose's discussion of the role of resources in diversification provides a view of firm expansion into *new* products and markets. The RBV might be useful in addressing this issue.

Other theorists have emphasized the more fundamental contribution of resources to sustainable advantage for single-business firms by examining how or why resources contribute to the advantage of one firm over another in a particular product/market (e.g., Barney, 1991; Conner, 1991; Powell, 1992a,b). This "business-level" question of how to compete is elemental in determining both the RBV's theoretical basis and its potential contributions to strategic management. As a growing firm achieves "a satisfactory and reasonably secure position" in its original business and generates resources in excess of those required for maintaining that position, it may look to opportunities for diversification (Penrose, 1959: 136). With the business-level RBV, however, researchers attempt explanations for resource-based advantages in single industries—that is, how the growing firm achieves its initial, "secure" position. These explanations lay the conceptual foundation for subsequent analyses of how resource-based advantages may be leveraged via diversification. Thus, the primary, business-level RBV is of principal interest in our study.

The Wernerfelt (1984) and Barney (1991) articles are seminal works in the RBV stream. While Wernerfelt emphasizes resources and diversification, Barney provides what is arguably the most detailed and formalized depiction of the business-level resource-based perspective. His "organizing framework"—"that organizational resources that are valuable, rare, difficult to imitate and non-substitutable can yield sustained competitive advantage" (Meyer, 1991: 823)—has supplied the footing for many RBV studies, with subsequent work based on either his framework or an extension.

When extending Barney's (1991) framework, however, most researchers have defined any new terms of interest without formally specifying the original, underlying RBV terms. Indeed, in much of the conceptual and empirical RBV work, researchers have either paraphrased Bar-

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ney's (1991) RBV statements or simply cited his article without augmented definition (e.g., Bates & Flynn, 1995; Brush & Artz, 1999; Litz, 1996; McWilliams & Smart, 1995; Michalisin, Smith, & Kline, 1997; Mosakowski, 1998; Powell, 1992a,b; Rindova & Fombrun, 1999; Yeoh & Roth, 1999). Attempts to further define underlying RBV constructs or specify causal relationships have been sparse. Table 1 provides representative RBV definitions that refer to Barney's (1991) conceptual work. Because of its influence, its attempt to formalize the RBV as theory, and the relative lack of subsequent definitional work, we selected Barney's (1991) article to provide the primary, baseline definitions of the "single-business" RBV for our investigation.

Barney (1991) notes that two assumptions are elemental to the RBV: (1) resources are distrib-

TABLE 1
Sample Definitions of and Relationships Among Underlying RBV Constructs

RBV Article	Definitions and Underlying Relationships
Powell (1992a: 552)	"The resource view holds that, in order to generate sustainable competitive advantage, a resource must provide economic value and must be presently *scarce, difficult to imitate, nonsubstitutable, and not readily obtainable in* factor markets (Barney, 1991; Dierickx & Cool, 1989; Peteraf, 1990)."
Bates & Flynn (1995: 235)	"This theory rests on two key points. First, that resources are the determinants of firm performance (Barney, 1991; Schulze, 1992), and second that resources must be rare, valuable, difficult to imitate and nonsubstitutable by other rare resources. When the latter occurs, a competitive advantage has been created (Barney, 1991)."
Litz (1996: 1356)	"Barney's (1991) conceptual work on resource characteristics was especially helpful. He proposed that resources be characterized as simultaneously valuable, rare, nonsubstitutable, and inimitable. To the extent that an organization's physical assets, infra-structure, and workforce satisfy these criteria, they qualify as resources."
Michalisin, Smith, & Kline (1997: 360)	"Such resources, coined *strategic assets*, are simultaneously valuable, rare, imperfectly imitable and nonsubstitutable (Barney, 1991). RBV proponents assert that ownership or control of strategic assets determine [sic] which firms can earn superior profits and which firms do not. Unfortunately, there is little empirical research to support that prescription (Miller & Shamsie, 1996).
Bowen & Wiersema (1999: 628–629)	"... as the strategy literature argues, a firm's performance depends fundamentally on its ability to have a distinctive, sustainable competitive advantage which derives from the possession and utilization of unique, non-imitable, non-transferable, firm-specific resources (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984)."
Brush & Artz (1999: 223)	"... some gaps in the available theories raise new challenges. Barney's (1991) four criteria for resources to confer a competitive advantage—value, rarity, imitability, and substitutability—are limited in their practical usefulness for this problem because they are context insensitive (i.e., noncontingent)."
Combs & Ketchen (1999: 869)	"To be a source of sustained above-average performance, resources must meet three criteria. They must be: (1) valuable, meaning buyers are willing to purchase the resources' outputs at prices significantly above their costs; (2) rare, so that buyers cannot turn to competitors with the same or substitute resources; and (3) imperfectly imitable, meaning it is difficult for competitors to either imitate or purchase the resources (Barney, 1991; Peteraf, 1993)."
Rindova & Fombrun (1999: 694)	"Resource-based theory (Penrose, 1959; Barney, 1991) attributes advantage in an industry to a firm's control over bundles of unique material, human, organizational and locational resources and skills that enable unique value-creating strategies (Barney, 1991). Heterogeneous resources create distinct strategic options for a firm that, over time, enable its managers to exploit different levels of economic rent (Peteraf, 1993). A firm's resources are said to be a *source of competitive advantage to the degree that they are scarce,* specialized, appropriable (Amit & Schoemaker, 1993), valuable, rare, difficult to imitate or substitute (Barney, 1991)."

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uted heterogeneously across firms, and (2) these productive resources cannot be transferred from firm to firm without cost (i.e., resources are "sticky"). These assumptions are the axioms of the RBV. Given the assumptions, Barney (1991) makes two fundamental arguments. First, resources that are both rare (i.e., not widely held) and valuable (i.e., contribute to firm efficiency or effectiveness) can produce competitive advantage. Second, when such resources are also simultaneously not imitable (i.e., they cannot easily be replicated by competitors), not substitutable (i.e., other resources cannot fulfill the same function), and not transferable (i.e., they cannot be purchased in resource markets; Dierickx & Cool, 1989), those resources may produce a competitive advantage that is long lived (sustainable). Thus, rarity and value are each necessary but not sufficient conditions for competitive advantage, whereas nonimitability, nonsubstitutability, and nontransferability are each necessary but not sufficient conditions for sustainability of an existing competitive advantage.

From these core ideas, arguments have been advanced that single-business firms can achieve sustainable competitive advantage from such resources as information technology (Mata, Fuerst, & Barney, 1995; Powell, 1997), strategic planning (Michalisin et al., 1997; Powell, 1992a), organizational alignment (Powell, 1992b), human resources management (Flood, Smith, & Derfus, 1996; Lado & Wilson, 1994; Wright & McMahan, 1992), trust (Barney & Hansen, 1994), organizational culture (Fiol, 1991; Oliver, 1997), administrative skills (Powell, 1993), top management skills (Castanias & Helfat, 1991), and *guanxi* (Tsang, 1998), among others. Moreover, the number of proponents who have elevated the RBV from the status of "view" to "theory" has enhanced its visibility and also suggests widespread acceptance (e.g., Barney, 1996; Conner, 1991; Grant, 1991; Mahoney & Pandian, 1992; Maijoor & van Witteloostuijn, 1996).

To evaluate more formally the *breadth* of diffusion of the RBV throughout the strategy literature, we map RBV studies versus the eighteen strategy research topics originally identified by Schendel and Hofer (1979) and later used by Shrivastava (1987) to categorize strategic management research programs. Since 1991 thirteen of the eighteen research topic areas have been examined from the perspective of the RBV (see Table 2 for a listing). This comprehensive penetration of the RBV into the strategy literature shows the high level of research resources being expended pursuing RBV-related questions and suggests that a more rigorous investigation of the RBV's efficacy and its usefulness for strategy research might be overdue. As a first step in this investigation, we next examine the degree to which the RBV appears to meet the criteria required of theoretical systems.

EXAMINING THE RBV AS THEORY

The degree to which the RBV is likely to enrich strategy research depends, in part, on the extent to which it *becomes* a theory of competitive advantage. Accurately identifying the current theoretical state of the RBV might aid its future development. In this section we examine the degree to which the RBV presently possesses the explanatory and predictive power generally associated with theories. We limit our investigation to whether the RBV arguments regarding competitive advantage currently meet generally accepted criteria for classifying a set of statements as a theory. We do not address whether the RBV represents a new theory of the firm (e.g., Conner, 1991), because in the RBV set forth by Wernerfelt (1984) and Barney (1991), key issues explained in theories of the firm are not addressed. These issues include why the firm exists in place of alternate systems for organizing economic activities and what determines the scope of the firm (e.g., Alchian & Demsetz, 1972; Alchian & Woodward, 1987; Coase, 1937; Seth & Thomas, 1994). "A firm's fundamental objective (to make money)" (Conner, 1991: 123) does *not* explain why it exists as a form of organizing economic activity *compared to other possible forms* (see the literature on property rights; e.g., Alchian & Demsetz, 1972; Alchian & Woodward, 1987).

To examine the degree to which the RBV is now or is likely to become a theory of competitive advantage, we first evaluate fundamental RBV statements as to their "lawlike" status. We then investigate aspects of the logic of the RBV for theoretical force and internal consistency.

Lawlike Generalizations in the RBV

We evaluate the RBV as a theoretical system by relying on the schemes and definitions pro-

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TABLE 2
Research Programs in Strategic Management Related to the RBV of the Firm

Research Topic	Research Program	Representative Authors
Strategy concepts	1. Alternative frameworks	Barney (1991)
	2. Agency theory	Sherer, Rogovsky, & Wright (1998)
	3. Network theory and Austrian economics	Zaheer & Zaheer (1997)
	4. Theory of the firm	Barney (1996); Conner (1991) Conner & Prahalad (1996); Foss (1996a,b)
	5. Innovations and advantage	Bates & Flynn (1995)
	6. Organizational learning	Grant (1996) Garud & Nayyar (1994)
	7. Contingency model	Collis (1994)
Strategic management processes	Behavioral models and culture; culture/ resource selection	Fiol (1991); Knez & Camerer (1994); Levinthal & Myatt (1994); Oliver (1997)
Board of directors	Top management teams	Flood, Smith, & Derfus (1996)
General management roles in strategy management	Managerial action and prescriptions	Marino (1996); Parkinson (1995)
Social responsibility	Social and natural environmental issues	Hart (1995); Litz (1996); Russo & Fouts (1997)
Strategy formulation	Competitive strategy and building competitiveness	Black & Boal (1994); Wernerfelt (1984)
Environmental analysis	Environment and resource relationships	Fahy (1996); Maijoor & van Witteloostuijn (1996); Miller & Shamsie (1996)
Strategy implementation and evaluation	Industry structure/knowledge	Lado & Wilson (1994)
Strategy content	Human resource management as a resource	Boxall (1996); Flood, Smith, & Derfus (1996); Lado & Wilson (1994); Wright & McMahan (1992)
Formal planning systems	Strategic assets and planning	Michalisin, Smith, & Kline (1997); Powell (1992a)
Strategic control	Strategic information support systems	Mata, Furst, & Barney (1995)
Entrepreneurship and new ventures	Alliance formation	Eisenhardt & Schoonhoven (1996)
	Resources and performance	Robbins & Wiersema (1995)
Multibusiness multicultural firms	International strategic management	Collis (1991); Moon (1997); Taylor, Beechler, & Napier (1996)
Other	Mergers, acquisition, and diversification	Ingram & Thompson (1995); Markides & Williamson (1996)
	Underlying resources that lead to quality	Powell (1995)
	Philosophy of science	Godfrey & Hill (1995)

posed by Rudner (1966), Bacharach (1989), Whetten (1989), Hunt (1991), and McKelvey (1997), with reference to others' ideas where that clarifies the specific exposition for the RBV. This is not to say that there is not significant debate about what constitutes a theory. However, both Hunt (1991) and McKelvey (1997) suggest that consensus has built around the definition of theory originally offered by Rudner: "A theory is a systematically related set of statements, including some lawlike generalizations, that is empirically testable" (1966: 10). Hunt notes further, "The purpose of theory is to increase scientific understanding through a systematized structure capable of both explaining and predicting phenomena" (1991: 149).

Here we focus on the criterion mandating that at least some lawlike generalizations be present in a theory. For a system of statements to have the force of a scientific theory, some of the statements must be lawlike in that they (1) are generalized conditionals, (2) have empirical content, and (3) exhibit nomic necessity.

Generalized conditionals. Generalized conditionals are "if/then" statements. The RBV clearly

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contains such statements: Proponents of the RBV assert that if a firm attribute is rare and valuable, then that attribute is a resource that can give the firm competitive advantage. And if a resource that accords a firm competitive advantage is hard to imitate and is not substitutable, then that resource can provide the firm with sustainable competitive advantage (Barney, 1991). Both of these statements, central to the RBV, are generalized conditionals and meet Rudner's (1966) first criterion for lawlike generalizations.

Empirical content. Management scholars frequently address this criterion when discussing requirements for good theory, following Popper's (1959) falsifiability requirement (e.g., Bacharach, 1989; McKelvey, 1997). Bacharach (1989), for example, has suggested that many organizational-level theories are so vague they can never be empirically tested.

The empirical content criterion, however, addresses the semantics and logic of theory, rather than vagueness. The empirical content criterion helps separate purely *analytic* statements, which are true because of their "either/or" form or because of the way their terms are defined, from *synthetic* statements, which we can know to be true only after investigation (Hunt, 1991). Nontheoretical, analytic statements can be determined to be true or false based on their logic or their definition of terms. For example, "either the sun is shining or it is not," and one does *not* have to look out the window to verify the statement. The same can be true for definitions. A "firm that improves its efficiency will exhibit a larger output-to-input ratio," because efficiency is defined as the ratio of outputs to inputs. Thus, a confrontation with data is not required to determine the correctness of analytic statements. Synthetic statements, such as "if managers are older, then they tend to be more risk averse," are said to have empirical content because the "real world" must determine their correctness. They are not true simply "by definition."

The statements found in the RBV are *logically* synthetic, as can be seen by their if/then form, shown in the earlier analysis of the generalized conditional criterion. One way to examine whether they are synthetic or analytic based on their *definitions of terms* is to replace each term in a basic statement of the theory with its definition in the theory. This process allows one to better evaluate whether the statements are, or are not, true by definition. In the earlier example this would be done by replacing the term "efficiency" with its definition: a "firm that improves its ratio of outputs to inputs (efficiency) will exhibit a larger output-to-input ratio." Following the replacement, it becomes clear that this is an analytic statement, with no empirical content. For more complex theoretical statements, replacing the theory's terms with their definitions from the theory may result in several possible revised statements. Several of these statements may appear plausibly synthetic. If one such statement is analytic, however, further conceptual work is required before the underlying statement can become a lawlike generalization.

This process has been used previously in the management literature—by Bacharach when examining Young's (1988) critique of population ecology's structural inertia theory and Vecchio's (1987) critique of situational leadership theory. Bacharach concludes, "In these two examples, a tautological proposition or hypothesis is self-verifying and, therefore, not subject to disconfirmation" (1989: 505). To maximize consistency in our application of the process, we use only the precise statements and definitions from Barney (1991) in the substitutions, although we discuss the work of others later. For ease of exposition, we examine those terms associated with competitive advantage first and set aside issues associated with sustainability and substitutability.

The fundamental RBV *theoretical statement* we investigate is "that valuable and rare organizational resources can be a source of competitive advantage" (Barney, 1991: 107). In his 1991 article Barney cites others' prior definitions of *firm resources* as including "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 (Daft, 1983)" and as "firm attributes that may enable firms to conceive of and implement value-creating strategies (Hitt & Ireland, 1986; Thompson & Strickland, 1983)" (Barney, 1991: 101). He defines resources as *valuable* "when they enable a firm to conceive of or implement strategies that improve its efficiency and effectiveness" and "when they exploit opportunities or neutralize threats in a firm's environment" (Barney, 1991: 106). Barney defines *competitive advantage* as a firm "implementing

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a value creating strategy not simultaneously being implemented by any current or potential competitors"; further, he reasons that competitive advantage cannot exist for identical firms, because since "these firms all implement the same strategies, they will improve their efficiency and effectiveness in the same way, and to the same extent" (1991: 102, 104). *Rarity* is not specifically defined but is used in its general sense.

Substituting these specific definitions for the terms in the above theoretical statement produces revised statements, including

1. "*Uncommon* organizational attributes *that enable firms to conceive of and implement value-creating strategies* can be a source of *implementing a value-creating strategy not simultaneously being implemented by any current or potential competitors,*"
2. "*Uncommon* organizational attributes that *enable a firm to conceive of or implement strategies that improve its efficiency and effectiveness* can be a source that may *enable a firm to conceive of or implement strategies that improve its efficiency and effectiveness,*" and
3. "*Uncommon* organizational attributes that *exploit opportunities and neutralize threats in a firm's environment* can be a source of *implementing an opportunity-exploiting and threat-neutralizing strategy not simultaneously being implemented by any current or potential competitors.*"

These are analytic statements that are true by definition, indicating that this elemental statement of the RBV is not a lawlike generalization. This suggests that this statement from the RBV, dealing directly with competitive advantage, is not amenable to empirical tests (e.g., Bacharach, 1989; Hunt, 1991). Bacharach argues that statements that are not testable—"no matter how profound and aesthetically pleasing"—still do not meet the test of being a theory (1989: 512). Thus, Barney's definitions indicate that additional conceptual work is needed if the foundation of the RBV is to meet the lawlike generalization standard. The underlying problem in the statement "that valuable and rare organizational resources can be a source of competitive advantage" (Barney, 1991: 107) is that competitive advantage is defined in terms of value and rarity, and the resource characteristics argued to lead to competitive advantage are value and rarity. Instead, the characteristics and outcomes must be conceptualized independently to produce a synthetic statement.

Nomic necessity. *If* the earlier statement from the RBV were reformulated to meet the empirical content requirement, then the reformulation could be examined for the third criterion: nomic necessity. Nomic necessity is the characteristic of theory that demands "the occurrence of some phenomenon *must* be associated with some other phenomenon; the relationship cannot be, simply, by *chance*" (Hunt, 1991: 111). Thus, to be a lawlike generalization, a statement must possess theoretical force by describing relationships that *must* occur, rather than by specifying accidental or spurious relationships (Gaski, 1985). For example, the statement "the rising sun warms the earth" possesses nomic necessity because *if it is true,* when the sun rises the earth must warm, and when the sun sets the earth must cool. Statements such as "all members of the top management team are men" or "if firms are in the data storage industry, then they are profitable" do not have nomic necessity. Even if they are true at the time the statements are made, one can easily imagine counterfactual conditions that could falsify them.

The Logic of the RBV

One step toward making RBV statements synthetic might be through the use of different, more widely accepted definitions of competitive advantage. They then could be examined for their logical consistency more independently of definitional issues. Barney notes, "It is not difficult to see that if a firm's valuable resources are absolutely unique among a set of competing and potentially competing firms, those resources will generate at least a competitive advantage" (1991: 107). When competitive advantage is defined as a firm "implementing a value creating strategy not simultaneously being implemented by any current or potential competitors" (Barney, 1991: 102), this is an analytic statement that is true based on the commonly accepted definitions of "absolutely unique" and "not simultaneously being implemented by any." The statement follows from Barney's previously argued, correct assertion that competitive advantage cannot exist for identical firms, because since "these firms all implement the same strategies, they will improve their effi-

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ciency and effectiveness in the same way, and to the same extent" (1991: 104).

The diametrical statement, however—that unique firms possess competitive advantage—does not logically follow without the help of definitional dependence. This can be seen when a more traditional definition of competitive advantage is substituted. Schoemaker defines competitive advantage as a firm "systematically creating above average returns" (1990: 1179). If this definition of competitive advantage were substituted into Barney's statement, equifinality suggests that there might be *many* approaches, or different resource configurations, that could achieve a particular level of return. Indeed, rather than the rarity of the resources used, it is the *relative* difference in the amount of *value* generated by firms that is elemental to competitive advantage under Schoemaker's (1990) definition. For example, in a heterogeneous firm duopoly, wherein one firm pursues a cost leadership strategy and the other a differentiation strategy, if both firms generate the same return, there is no competitive advantage (Porter, 1980). And multiple heterogeneous firms in an industry each may pursue different strategies that each generates *the same level of value* and, thus, no competitive advantage.

This is not to argue that uniqueness (or rarity) in product differentiation, or even in resources, is not important, because often it is. Rather, the conclusion is that when the current formulation of the RBV is made more synthetic by reducing definitional dependencies, *value* is the fundamental component determining the extent of competitive advantage. If a firm consistently generates value greater than that generated by other firms in its industry, it must have at least one rare resource. If a firm has rare resources, however, it does not follow that it will generate value greater than that of other firms in its industry. In the next section we carry this argument further, suggesting that the values of resources are determined by demand-side characteristics, which are exogenous to the RBV model.

AN ELEMENTAL FALLACY OF THE RBV

The RBV has encouraged strategy researchers to explore "the usefulness of analyzing firms from the resource side rather than from the product side" (Wernerfelt, 1984: 171). The increased attention to firm resources has been beneficial in helping (1) to clarify the potential contributions of resources to competitive advantage, (2) to introduce strategy scholars to a number of useful descriptive theories from industrial organization economics (e.g., Alchian & Demsetz, 1972, on "teamwork" production, or DeVany & Saving, 1983, on price as a signal of quality), and (3) to alleviate a previous analytical overemphasis on the opportunities and threats that arise from the product side.

In arguing for the RBV, Barney (1991) notes that in previous strategy research, with its strong analytical emphasis on the competitive environment, researchers implicitly adopted two important simplifying assumptions. The first was that firms within an industry are homogeneous regarding resources and strategies. The second was that firm resources are highly mobile. Contrary to these implicit assumptions,

> the resource-based view of the firm substitutes two alternate assumptions in analyzing sources of competitive advantage. First, this model assumes that firms within an industry (or group) may be heterogeneous with respect to the strategic resources they control. Second, this model assumes that these resources may not be perfectly mobile across firms, and thus heterogeneity can be long lasting (Barney, 1991: 101).

These explicit RBV assumptions are likely more accurate reflections of reality than were the implicit simplifying assumptions they replaced from the environment-focused models.

For a full comprehension of the RBV, however, one must recognize that it, too, includes implicit simplifying assumptions. Whereas the simplifying assumptions of environment-focused models of competitive advantage are made on the resource side, the implicit assumptions of the RBV are made on the demand side. Resources are said to be valuable "when they exploit opportunities or neutralize threats in a firm's environment" or "when they enable a firm to conceive of or implement strategies that improve its efficiency and effectiveness" (Barney, 1991: 106). Earlier, value was shown to be a fundamental concept to both the RBV and to relative competitive advantage. The RBV value definitions clearly show, however, that it is the *market environment*, through opportunities and threats, that determines the degree of value held by each firm resource in the RBV. As the competitive environment changes, resource values may

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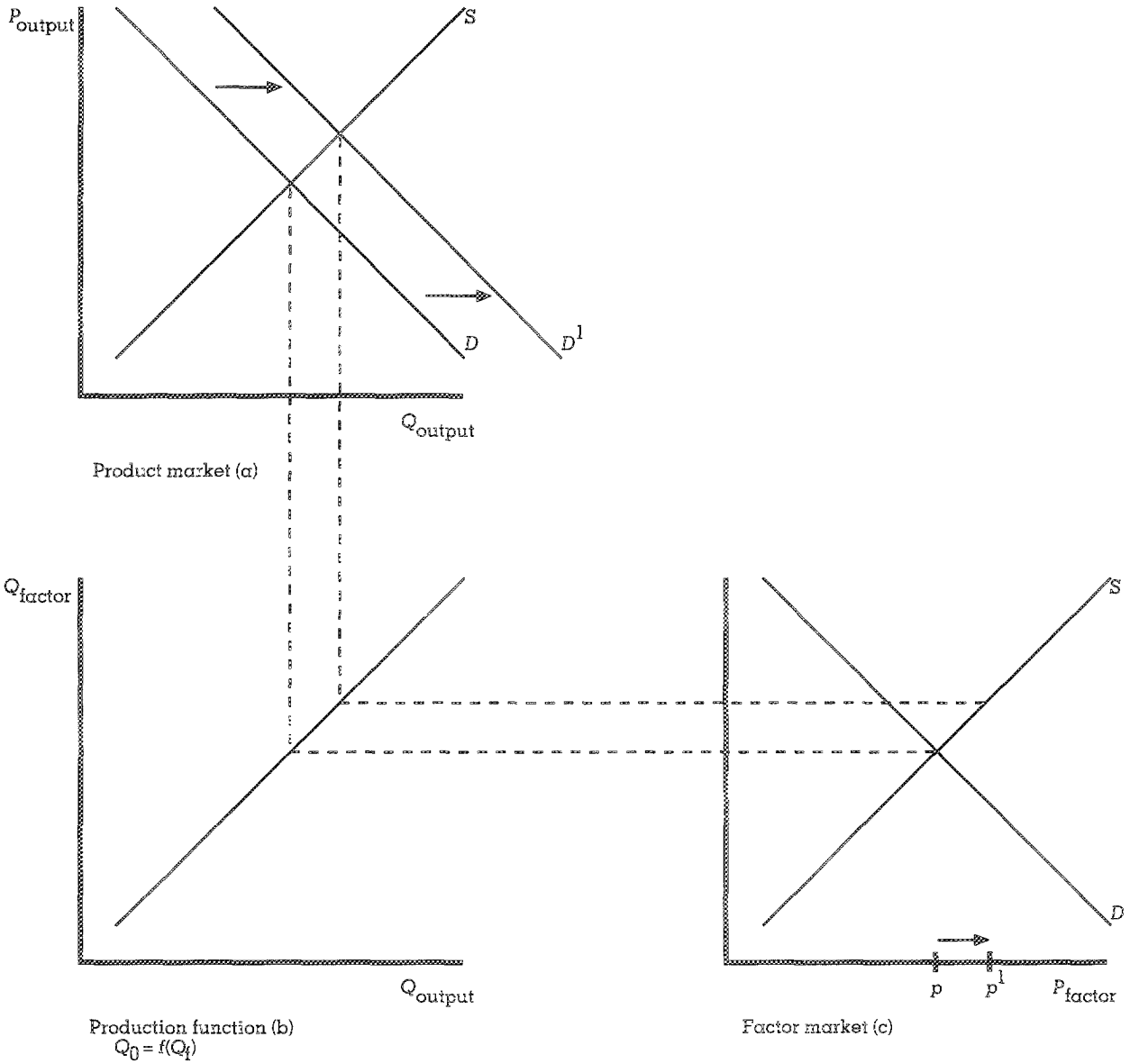
change. Thus, resource value is determined from a source exogenous to the RBV. This, in effect, holds constant (i.e., outside the model) product and customer factors, because if product and customer factors vary, then resource values may vary, and unpredictable resource value changes will result in indeterminate outcomes in resource-based analyses. Therefore, just as the prior environment-focused models simplified strategic analysis with an implicit assumption of homogeneous and mobile factor markets, the RBV itself simplifies strategic analysis with an implicit assumption of homogeneous and immobile product markets (i.e., unchanging demand; see McWilliams & Smart, 1995, for a similar argument from the perspective of the S-C-P [structure-conduct-performance] paradigm).

Figure 1 shows how product markets influence factor value through a simplified model for a single factor of production and a single product, where neither the factor costs nor the factor quantities are fixed (e.g., Cole, 1973: 436–443).

FIGURE 1
A Simplified Equilibrium Model Showing a Product Market and Factor Value



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The rightward shift in the demand curve in the product market (panel a) is transmitted through the production function (panel b), which would produce a rightward shift in demand in the factor market (panel c). The outcome would be a larger quantity of the factor supplied at a higher price as equilibrium moves upward along the supply curve (panel c). Thus, value in the factor market is influenced by demand in the product market (this is especially apparent if factor quantity is held constant with a vertical supply curve). Yet, product demand remains external to the RBV.

One must be aware of the simplifying assumptions when drawing conclusions from RBV-based analyses. Although partial equilibrium models of factor markets alone or product markets alone can produce considerable insight, these approaches might carry particular risks for conceptualizing complex strategy issues. Strategic management requires general solutions that are in concordance with its general management orientation. Yet, even general models, such as that shown in Figure 1, must be made even more dynamic for usefulness in strategic management. For example, entrepreneurial insights concerning future demand shifts in product or factor markets may allow acquisition of long-lasting factors at low cost. First mover advantage would result, because follow-on competitors could only acquire these factors at higher cost. Subsequent changes in customer preferences, however, would result in further shifts in demand that could easily reduce the factors' values and erode the advantage. Practicing strategists do not have the luxury of ceteris paribus assumptions that all other aspects of a strategic situation remain equal. Thus, one might suspect that a synthesis of the resource- and environment-based perspectives might be an important next step toward a more complete strategy theory, as will be discussed later.

IS THE RBV SUITABLE FOR STRATEGY RESEARCH?

Perspectives or "views" need not be complete theories in order to contribute to our understanding of strategic management. SWOT analysis is one example of a perspective that has improved strategy scholars' understanding and has been useful for practitioners. In this section we investigate the suitability of the RBV for strategy research by considering the characteristics of strategic management and how they may affect the operational validity of the RBV for strategy practitioners.

Characteristics of Strategy and the RBV

The field of strategic management has a number of distinctive characteristics that include embracing practitioners and valuing prescription (Barney, 1992). Meyer has noted, for example, that "true to its general management orientation, the field of strategy has consistently used firm level performance as the definitive dependent variable" (1991: 824). One strategy researcher interviewed in Meyer's study asserted that "research questions are inherently uninteresting or trivial unless they include an explicated linkage to performance" (1991: 825). Thus, a fundamental question for strategy researchers is the utility of the RBV in developing meaningful management tools in the form of actionable prescriptions for practitioners (see, for example, Eccles & Nohria, 1992, and Mosakowski, 1998).

Thomas and Tymon (1982) address this issue in their discussion of research relevance. They define "operational validity" as "the ability of the practitioner to implement the action implications of a theory by manipulating its causal (or independent) variables" (1982: 348). Operational validity is a necessary but not sufficient condition for managerially relevant research. According to Thomas and Tymon's definition, if the RBV were a theory that was descriptively accurate and that generated prescriptions for strategy practitioners, it would not be operationally valid unless it was also practicable for managers to manipulate the key independent variables. Simply advising practitioners to obtain rare and valuable resources in order to achieve competitive advantage and, further, that those resources should be hard to imitate and nonsubstitutable for sustainable advantage, does not meet the operational validity criterion. Effective prescription must also include, at a minimum, criteria on which each alternative resource can be judged on each resource characteristic. Industrial organization (I/O) economics can provide criteria for the imitability and substitutability characteristics associated with sustainability (e.g., Lippman & Rumelt, 1982). These criteria include a resource's causal ambiguity or social complexity (Barney, 1991).

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Prescription regarding competitive advantage itself, however, still is hindered because the criteria for value in the RBV remain, at present, in an exogenous "black box."

Boundaries of the RBV

When this problem is resolved, the appropriate *contexts* for prescription still must be addressed. Dubin (1976) and Whetten (1989) have argued that an aspect of theory as important as the theories themselves is the identification of the contexts within which theories are expected to hold. This notion can be seen, for example, in Hofstede's (1991) assertion that many U.S. management theories might not apply in other countries and in Eisenhardt's (1989) finding that comprehensive and speedy decisions might be particularly beneficial in "high-velocity" environments. In fact, in most theories contexts are established within which particular assertions hold (e.g., Burns & Stalker, 1961; Lawrence & Lorsch, 1967). Relative to other strategy theories, however, little effort to establish appropriate contexts for the RBV has been apparent.

There are two recent exceptions. Miller and Shamsie (1996) used a resource-based orientation in examining the performance of seven major Hollywood film studies over thirty years that began with a period of stability but turned into one of change. Control over property-based resources was associated with higher levels of studio performance during the period of stability while knowledge-based resources contributed to higher levels of performance during the period of environmental turbulence. Thus, with their study, Miller and Shamsie (1996) took a step toward establishing boundaries for the RBV by hypothesizing *contexts* within which particular resources were determined to be more or less valuable. Their work was one of the first attempts to integrate the RBV model and environmental models by identifying resource values through characteristics of product markets.

Similarly, in their recent work, Brush and Artz (1999) determined that different capabilities are necessary to provide different classes of service in the veterinary industry. Their contingency approach has important implications for industry practitioners making resource investments. Continued development of such contingency theories of resource value might be a helpful step in clarifying the role and likely contributions of the RBV in strategy research.

All-Inclusive Resources

The RBV tendency toward resource classifications that are all inclusive might have made it more difficult to establish contextual boundaries. Although there have been differences in the way resources are defined (cf. Barney, 1991; Wernerfelt, 1984), the following quotation is typical regarding inclusiveness:

> By a resource is meant anything which could be thought of as a strength or weakness of a given firm. More formally, a firm's resources at a given time could be defined as those (tangible and intangible) assets which are tied semipermanently to the firm (see Caves, 1980). Examples of resources are: brand names, in-house knowledge of technology, employment of skilled personnel, trade contracts, machinery, efficient procedures, capital, etc. (Wernerfelt, 1984: 172).

That virtually *anything* associated with the firm can be a resource suggests that prescriptions for dealing in certain ways with certain categories of resources might be operationally valid, whereas other categories of resources might be inherently difficult for practitioners to measure and manipulate. One example of a resource that might be difficult to measure and manipulate is tacit knowledge (Polyani, 1962, 1966). Some have argued for tacit knowledge—that understanding gained from experience but that cannot be expressed to another person and is unknown to oneself—as a source of competitive advantage (e.g., Coff, 1997; Lado, Boyd, & Wright, 1992; McAulay, Russell, & Sims, 1997; Saviotti, 1998). This may be descriptively correct, but it is likely to be quite difficult for practitioners to effectively manipulate that which is inherently unknowable.

In addition, even if a resource can be manipulated, RBV researchers must be clearer concerning the practitioner level at which prescriptions can be made. The "CEO resources" investigated by Castanias and Helfat (1991) are one example: prescriptions to top managers of poorly performing firms that they are the source of the problem and should think about voluntarily exiting clearly would be considered unhelpful. This is a case where viewing CEOs as resources would have more prescriptive implications for boards of directors than for the CEOs

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themselves. Similarly, viewing boards of directors as resources would have more prescriptive implications for the CEOs who appoint boards or the governments that regulate them than for the boards themselves. Thus, some resources may be of less interest to strategy researchers than others, depending in part on whether the resource can be manipulated and in part on the group—frequently CEOs—for whom prescriptions are desired. Identifying specific resources that may be particularly effective for certain actors in certain contexts might be a helpful first step in establishing boundaries for (and contributions of) the RBV in strategic management.

The Process Black Box and the RBV

Miller and Shamsie (1996) assert that the strategy literature contains numerous references to resources being useful, without careful attention to when, where, and how they may be useful. The "how" questions address the issue of the process black box in strategy research (Lawrence, 1997; Whetten, 1989). When, where, and who are the three questions, Whetten has argued, necessary to "set the boundaries of generalizability, and as such constitute the range of the theory" (1989: 492). Miller and Shamsie's (1996) work has raised and begun to answer important when, where, and how questions about knowledge-based resources and firm performance. It appears that they were able to do so, however, *without* the RBV itself making an elemental contribution to their reasoning: resource-based "logic" was not required to make their contingency arguments. Attempts to develop a "knowledge-based" theory of the firm, following in part from the RBV, can be found in Conner and Prahalad's (1996) and Kogut and Zander's (1996) work. Again, however, the foundational RBV appears not to be essential in making these arguments (Foss 1996a,b).

Static and Dynamic Approaches to the RBV

Although the RBV began as a dynamic approach emphasizing change over time (e.g., Dierickx & Cool, 1989; Penrose, 1959; Wernerfelt, 1984), much of the subsequent literature has been static in concept. The typical sequence of arguments offered in the static RBV literature is as follows. First, a variation of the theoretical statement we examined earlier—that some resource can produce competitive advantage—is presented. Then the heterogeneity and, therefore, rarity of that resource are established. Next, resource value is demonstrated by asserting that the resource can produce competitive advantage. Finally, isolating mechanisms are confirmed, making resource replication difficult and thereby suggesting that the advantage may be sustainable. Variations on this argument have been advanced for resources ranging from strategic planning and top management skills (Castanias & Helfat, 1991; Michalisin et al., 1997; Powell, 1992a) to organizational culture and *guanxi* (Fiol, 1991; Oliver, 1997; Tsang, 1998).

Yet, this static RBV argument has notable potential limitations for strategic management research. First, the static argument is descriptive: it identifies generic characteristics of rent-generating resources without much attention to differing situations or resource comparisons. In the Castanias and Helfat (1991) article, for example, although CEOs (as resources) are argued to have superior or inferior management skills, there is no basis for discriminating among superior and inferior CEOs, other than waiting for the performance results. Second, the processes through which particular resources provide competitive advantage remain in a black box (Lawrence, 1997, provides a discussion of this issue in strategy research). We do not know, for example, *how* the resources generate sustainable rents, other than through their heterogeneity. Why is it that some heterogeneous resources generate value, whereas other heterogeneous resources do not? Third, some resources studied, such as tacit knowledge, are inherently difficult for practitioners to manipulate. Thus, these resources likely fail Thomas and Tymon's (1982) test of operational validity. Fourth, in static RBV studies researchers sometimes take a frequently researched strategy subject area, relabel the independent variables as "resources" and the dependent variables as "competitive advantage," and use measures common to much cross-sectional strategy research as operationalizations (e.g., Powell, 1992a). Such studies show that the resource-based labels are *not* necessary for much strategy research. Fifth, the static RBV arguments suffer from the *In Search of Excellence* (Peters & Waterman, 1982) problem in that it is quite easy to identify, a posteriori, *many* "valuable" resources in high-performing firms.

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Together, these issues suggest that the current high level of abstraction found in the static approach to the RBV might be one thing that could limit its usefulness for strategy researchers. RBV studies from this approach would likely be more helpful if the key underlying constructs were carefully defined and the specific mechanisms purported to generate competitive advantage carefully detailed. The problems of static studies might be exacerbated when theorists extend the RBV to second-order issues and beyond, wherein the ability to *learn* to develop effective resources is in itself a resource, the ability to establish an environment that encourages such learning is a resource, and onward in an infinite regress (see Collis, 1994, for a discussion).

DISCUSSION

Our investigation suggests several conclusions concerning the present state of the single-business RBV, both as a theory or potential theory of competitive advantage and as a useful perspective for strategy research. Theory-related conclusions include the following: (1) considerable conceptual work remains before the RBV can meet the requirements of a theoretical structure; (2) the RBV makes implicit assumptions about product markets, just as earlier environment-based models made implicit assumptions about resources; and (3) the fundamental "value" variable is exogenous to the RBV. As a perspective for strategy research, (4) overly inclusive definitions of resources make it more difficult to establish contextual and prescriptive boundaries, and (5) static, cross-sectional approaches to RBV development may result in causal hows and whys remaining in a black box.

Given these conclusions, one could be tempted to speculate that the RBV is simply a fad of management scholarship (Abrahamson, 1991, 1996) and that it has gained acceptance primarily because of its wide applicability and intriguing terminology (e.g., *tradability, substitutability, causal ambiguity*). Such speculation would be premature. The RBV, although no longer an especially "young" framework, might yet achieve theory status with additional conceptual work to begin to overcome the challenges outlined below. Although as part of the explication of our ideas we outline at least one possible approach for overcoming each challenge, identifying and implementing feasible solutions for each remain formidable tasks. We believe the critical challenges include formalizing the RBV, answering the how questions, incorporating the temporal component, and integrating the RBV with demand heterogeneity models.

Formalizing the RBV

One requirement for theory in the definition presented earlier (Rudner, 1966) is that the statements must be systematically related, thereby possessing internal consistency (Dubin, 1976).

> To check for internal consistency, all of the concepts in each statement of the theory must be clearly defined, all of the *relationships* among the concepts must be clearly specified, and all of the *interrelationships* among the statements in the theory must be clearly delineated (Hunt, 1991: 152).

Also, the axioms underlying the theory must be identified. When theories are so specified, they are amenable to being evaluated through the process of formalization. "The attempt to even partially formalize a theory, by baring its essential structure or morphology, can sharpen the discussion of the theory and put it into a framework suitable for testing" (Hunt, 1991: 159).

The axioms underlying the RBV—that resources are heterogeneous and not perfectly mobile—have been clearly identified. The implicit assumptions identified earlier are typical of most theories. The concept definitions and interrelationships, as well as the interrelationships among the statements in the elemental RBV, however, require additional development and then reevaluation against the requirements of theory. Repetition of this process likely will pay off in greatly improved clarity and understanding and could lead to a testable RBV that fully meets the requirements of a theoretical structure.

Answering the How Questions

The I/O economics work that provides the foundation for the RBV is primarily descriptive and explanatory, whereas the strategy discipline is prescriptive (Barney, 1992; McWilliams & Smart, 1995; Meyer, 1991). Another challenge for RBV researchers is to answer enough how

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questions—*How* can the resource be obtained? *How* and in which contexts does it contribute to competitive advantage? *How* does it interact/compare with other resources?—so that meaningful prescriptions can be offered and, ultimately, behavioral dimensions can be included in future RBV research (e.g., Schoemaker, 1990). Reed and DeFillippi (1990), for example, identified causal ambiguity—based on the tacitness, complexity, and specificity of a competency—as an important source of sustainability of competitive advantage (see also Lippman & Rumelt, 1982). Yet, when the causal relationships between actions and competitive advantage are unknown even to the firm's own managers (e.g., Barney, 1991), there is little potential for meaningful prescription. This was recognized by Reed and DeFillippi when they limited their discussion to "situations in which managers understand causal relationships better than their competitors, and where competencies can be manipulated for advantage" (1990: 91). Prescription *is* possible in such situations.

Researchers are taking steps toward answering how questions in RBV-related research (e.g., Brush & Artz, 1999; Miller & Shamsie, 1996; Yeoh & Roth, 1999). And methodologists are beginning to evaluate and suggest techniques for addressing these questions in the RBV context (e.g., Bowen & Wiersema, 1999; Rouse & Daellenbach, 1999). The continuation of these trends will likely aid in clarifying and improving the contribution of the RBV.

Incorporating the Temporal Component

One aspect of the RBV that could become its own distinctive competence is that it explicitly acknowledges a firm's *history* as an important antecedent to current capabilities and opportunities (e.g., Barney, 1991). This temporal component could produce a deeper understanding in the strategy literature of the complex interactions that occur *over time* between a firm's resources and its competitive environment. By explicitly introducing the temporal component of the RBV into the analysis, for example, Dierickx and Cool (1989) were able to generate a number of unique insights that may be particularly applicable to strategic management. Their ideas on the interconnectedness and erosion of asset stocks, for example, may be particularly helpful to practicing strategists because of the clear prescriptive implications.

Barney's (1991) definition of sustainable competitive advantage as occurring when competitors have ceased attempts at imitation also lends itself to temporal theory building. Further, these ideas are amenable to empirical test through such methods as the "rate perspective" described by McKelvey (1997: 365). One empirical exemplar is Miller and Shamsie's (1996) longitudinal investigation of the Hollywood film industry. Their study reflects firm-level history, although they do not specifically examine it.

Particularly salient topics for investigation with assistance from the RBV might include how firm resources and capabilities are accumulated and eroded (Dierickx & Cool, 1989) and how resources' relative values may be affected by market changes (Miller & Shamsie, 1996). The temporal factor could provide new insights in strategic management, just as it is beginning to in organizational behavior (e.g., Harrison, Price, & Bell, 1998). Incorporating time remains a challenge for RBV scholars.

Integrating the RBV with Demand Heterogeneity Models

One of the earliest frameworks for developing firm strategy—SWOT analysis—was geared toward identifying internal strengths and weaknesses, as well as external opportunities and threats (Learned et al., 1965). Bourgeois notes that "the central tenet in strategic management is that a match between environmental conditions and organizational capabilities and resources is critical to performance, and that a strategist's job is to find or create this match" (1985: 548). Thus, strategic management requires explicit attention to *both* the internal and the external, to production and demand, to resources and products. For the RBV to fulfill its potential in strategic management, its ideas must be integrated with an environmental demand model. Just as strategy requires general management skills, strategic complexity demands general models. The limiting homogeneity and mobility assumptions concerning resource markets that are common in industry-based, environmental models have been noted by RBV theorists (e.g., Barney, 1991). The contrary limiting homogeneity and immobility assumptions of the RBV concerning product markets

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were noted earlier, along with the RBV's exogenous determination of "value." Together, the limiting assumptions suggest that a more integrated approach to theory building might produce a more strategy-useful, normative result.

Some scholars have begun to take steps in this direction. Hunt (1997, 2000) and Hunt and Morgan (1995), for example, have proposed a "resource-advantage" (R-A) theory that "is a direct fusing of marketing's heterogeneous demand theory with management's resource-based theory of the firm" (Hunt, 1997: 59). Hunt's (1997, 2000) developing perspective draws heavily on Alderson's (1957, 1965) "general theory" of marketing. In this earlier resource-demand theory, Alderson explained how heterogeneous resources in their natural state were, through a series of sorts and transformations that resemble Porter's value chain (see Priem, Rasheed, & Amirani, 1997, for a comparison), matched with the heterogeneous segments of demand on the customer side. Priem (1992) accessibly described Alderson's theory and recent supportive findings in I/O economics.

One clear challenge for RBV scholars is to "fill in the blanks" for value and demand in order to help the RBV become a perspective more in line with Bourgeois' (1985) "central tenet" of strategy. This could also help the RBV move closer toward the status of a theory by establishing the RBV's position within a wider nomological network (Hunt, 1991).

CONCLUSION

In this article we have taken some tentative steps toward a more formal evaluation of the status and potential of the popular RBV of strategic management. The RBV does not presently appear to meet the empirical content criterion required of theoretical systems (Bacharach, 1989; Hunt, 1991; McKelvey, 1997). This does not mean, however, that conceptual work initiated from a resource perspective is not theory. Miller and Shamsie (1996), for example, presented a contingency theory developed in the context of firm resources. Nor does it mean that the RBV does not have potential to achieve theory status in the future. A concern, however, is that the elemental strategy concept of "value" remains outside the RBV. Yet, this value determination long has been acknowledged to be a critical factor for entrepreneurial success. Coase (1937), for example, quoted Knight's view:

> In the first place, goods are produced for a market, on the basis of entirely impersonal prediction of wants, not for the satisfaction of the wants of the producers themselves. The producer takes the responsibility of forecasting the consumers' wants (1933: 268).

This fundamental aspect of strategic judgment is exogenous to the RBV, yet sound strategic judgment requires *both* sides of Wernerfelt's (1984) metaphorical coin.

RBV theorists have argued persuasively that competitive advantage results from superior knowledge, or luck, or a combination of the two (Barney, 1986; Dierickx & Cool, 1989; Rumelt, 1984). Concerning superior knowledge, Alchian and Demsetz (1972) much earlier asserted that the firm may provide a "superior information service" relative to other forms of organizing. "Superior combinations of inputs can be more economically identified and formed from resources already used in the organization than by obtaining new resources (and knowledge of them) from the outside." Thus, "efficient production with heterogeneous resources is a result not of having *better* resources but in *knowing more accurately* the relative productive performances of those resources" (1972: 793). Concerning luck, the late Isaiah Berlin concluded his essay on political judgment with the thought that "there is always the part played by pure luck—which, mysteriously enough, men of good judgment seem to enjoy rather more often than others. This, too, is perhaps worth pondering" (1996: 30).

The RBV may yet make more important contributions to knowledge in strategic management, in part because thorny and messy strategic problems might not be amenable to solution through elegant theory. We have provided some suggestions for where and how the RBV may be able to contribute. The greatest potential likely will only be realized through complementary and integrated use of the RBV together with other, demand-oriented perspectives. Yet, efforts by RBV scholars to formalize the RBV, to answer the how questions, and to incorporate the temporal component will *each* likely pay off in increased contributions.

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