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The Resource-Advantage Theory of Competition: Dynamics, Path Dependencies, and Evolutionary Dimensions

The authors respond to the thoughtful concerns raised by Dickson (1996) about the issue of path dependencies and the dynamics of resource-advantage (R-A) theory (Hunt and Morgan 1995). Rather than R-A theory and Dickson's work being inconsistent, the authors point out that Hunt and Morgan (1995) cite Dickson's (1992) work on two different occasions as support for the dynamics of R-A theory. Furthermore, because R-A theory proposes that firms seek superior financial performance, when combined with the fact that all firms cannot be superior at the same time, R-A competition necessarily is dynamic. Moreover, though the issue of path-dependencies is more contentious than Dickson suggests, R-A theory fully accommodates path dependencies, because it is an evolutionary, nonconsummatory theory.

Since its first publication (Hunt and Morgan 1995, hereafter H&M), our resource-advantage (hereafter, R-A) theory of competition has proved even more provocative than we originally expected.[1] Although the communications we have received from marketers, management scholars, economists, executives, and government officials have been generally supportive, almost everyone expresses some concerns. Similar to Dickson (1996), most have constructively criticized how R-A theory addresses specific issues. Five questions surface time and again:

1. If R-A theory is dynamic, then why does its depiction in Figure 2 in H&M (p. 9) appear so static?
2. If R-A theory draws on Austrian economics, why is there no discussion of competition as a learning process?
3. If R-A theory is process-oriented, is it also an evolutionary theory with path dependencies?
4. If R-A theory contributes to explaining the superior productivity of market-based economies relative to command economies, how does R-A theory relate to endogenous growth models?
5. If R-A theory is superior to neoclassical theory in explaining firm diversity and the differences in productivity, innovation, and product quality between market-based and command economies, how does perfect competition relate to R-A theory?

Dickson (1996) focuses on the static appearance of Figure 2 in H&M (p. 9) and the importance, for him, of higher-order learning processes and path dependencies (i.e., questions 1–3). Accordingly, our reply focuses on these issues and points readers toward other works that address questions 4–5.

Competitive Dynamics, Innovation, Organizational Learning

At first glance, Dickson's (1996) claim that R-A theory is insufficiently dynamic will strike readers as curious. After all, he argues well in his 1992 *JM* article that consumers' tastes and preferences are always changing, and we cite his article to support our view that industry demand is "significantly heterogeneous and dynamic" (H&M 1995, p. 5). We also cite his (1992) article and Jacobson's (1992) article for our view that "markets are *never* in equilibrium" (H&M 1995, p. 6). We believed that citations to his work would be sufficient and that *JM* readers would not need a recapitulation of his convincing argument on dynamics.

Nonetheless, Dickson (1996) is correct in pointing out Figure 2's deficiencies. Because the reviewing process revealed difficulties in communicating the precise nature of our theory, we believed a schematic depiction would help. Alas, though no box and arrow model ever does justice to a theory's underlying complexity, Figure 2 is even worse than

[1]As we indicated in footnote 1 of H&M, we view *comparative advantage theory* and *resource-advantage theory* as equally appropriate labels for our theory. We have come to realize, however, that the label *comparative advantage* is so strongly associated with the comparative advantage theory of trade that many readers misinterpreted our theory as focusing on a comparative advantage in *physical* resources—the focus of neoclassical trade theory. Nothing could be further from the truth. Our theory focuses on the comparative advantage that a firm might have in both tangible and intangible resources. Indeed, organizational competencies, which are intangible resources in our view, play a major role in our theory. Therefore, because of the confusion that the label *comparative advantage* has caused, we now refer to the theory as the *resource-advantage theory of competition.*

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most. Dickson is also correct that we poorly explicate organizational learning processes and how competition contributes to those processes. His concern is understandable, because he views higher-order learning processes as his theory's "fundamental construct" (p. 104). Therefore, we here examine how R-A theory addresses learning processes and the sources of R-A competitive dynamics.

Higher-Order Learning Processes and Resource-Advantage Theory

In R-A theory, as Dickson acknowledges (p. 104), higher-order learning processes are complex resources that can yield marketplace positions of competitive advantage and, thereby, can result in superior financial performance. In contrast with Dickson's view that higher-order learning processes are the fundamental construct, however, R-A theory recognizes that other resources can, at times, yield superior financial performance. Surely, Dickson is not arguing that *all* firms having superior performance have mastered higher-order learning processes. Surely, the superior performance of *some* firms results from a comparative advantage in resources other than mastering higher-order learning processes. In fact, some firms could surely be skillful learners and still have inferior performance because they lack some other resource critical to success.

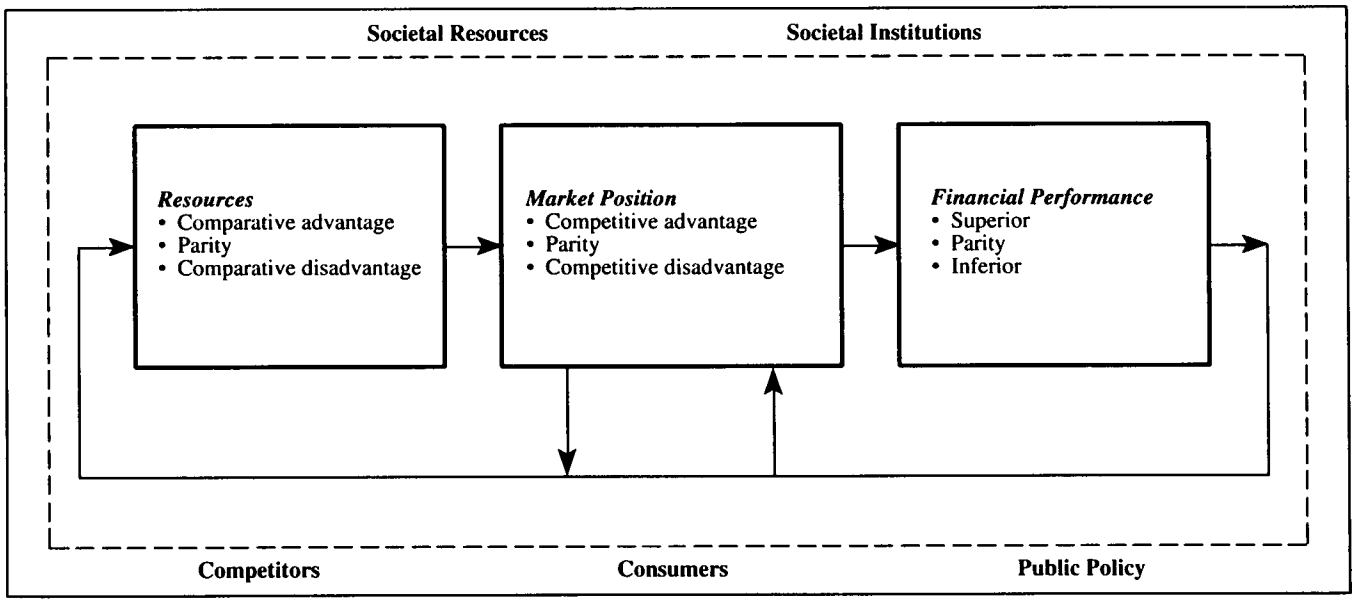
Despite its merit, Dickson's theory is insufficiently comprehensive for a *positive*, general theory of competition, because it has a single-minded focus on the benefits of higher-order learning processes. His work appears to function more like a normative theory that gives guidance to why firms should implement current calls to be "learning organizations" (Day 1994; Glazer 1991; Sinkula 1994; Stata 1989; Sujan, Weitz, and Kumar 1994). Indeed, he concludes that mastering higher-order learning processes "is surely an important part of a marketing executive's responsibility and skill" (p. 106).

In contrast, R-A theory cannot restrict itself to only one resource for competitive advantage because it is first and foremost a positive, general theory of competition. Indeed, recall that the basic argument in H&M (1995) was that (1) the minimum desideratum of a satisfactory theory of competition is that it should contribute to explaining certain observed differences between market-based and command economies, (2) neoclassical economists themselves have admitted that neoclassical theory cannot explain such differences, and (3) R-A theory can. Resource-advantage theory is a positive theory that has normative implications; it is not a normative theory that is grounded in positive assumptions.

Resource-Advantage Dynamics and Innovation

Figure 1, which is adapted from Hunt (1995), is not only a superior depiction of the dynamic processes inherent in our theory, but it also explicitly portrays how organizations learn as a direct result of competition. Indeed, we point out in Figure 1 that even firms that have not mastered higher-order learning processes do *learn*—sometimes the wrong things—from competing in the marketplace. Recall that R-A theory proposes that firms have the primary objective of superior

FIGURE 1
A Schematic of the Resource-Advantage Theory of Competition



Read: Competition is the disequilibrating, ongoing process that consists of the constant struggle among firms for a comparative advantage in resources that will yield a marketplace position of competitive advantage and, thereby, superior financial performance. Firms learn through competition as a result of feedback from relative financial performance "signaling" relative market position, which in turn signals relative resources.
Source: Adapted from Hunt (1995).

financial performance. Because the term *superior* equates with both *more than* and *better than*, it implies that firms seek a level of performance exceeding some referent. For example, the specific measure of financial performance might be profits, return on assets, or return on equity, whereas the specific referent might be the firm's own performance in a previous time-period or that of a set of rival firms, an industry average, or a stock market average. Both the specific measure and referent will vary from time to time, firm to firm, industry to industry, and culture to culture.

Why do some firms enjoy (suffer) superior (inferior) financial performance? For R-A theory, superior (inferior) performance at a point in time results from occupying marketplace positions of competitive advantage (disadvantage). But such marketplace positions must come from somewhere. Resource-advantage theory proposes that they result from a comparative advantage (disadvantage) in resources, which we define as the tangible and intangible entities available to firms that enable them to produce efficiently and/or effectively market offerings that have value for some market segments. Therefore, competition is the disequilibrating, ongoing process that consists of the constant struggle among firms for a comparative advantage in resources that will yield marketplace positions of competitive advantage and, thereby, superior financial performance. Competitive processes are significantly influenced by five environmental factors: the societal resources on which firms draw, the societal institutions that frame the "rules of the game" (North 1990), the actions of competitors, the behaviors of consumers, and public policy decisions.

In R-A theory, innovation plays a key role. We distinguish between *proactive* innovation (i.e., innovation by firms in the absence of specific competitive pressures) and *reactive* innovation (i.e., innovation directly prompted by competition). Evolutionary and Austrian approaches to explaining the dynamism of market-based economies have placed great emphasis on the proactive, innovative activities of entrepreneurs in spotting opportunities and subsequently developing market offerings (Jacobson 1992; Kirzner 1979; Nelson 1995; Schumpeter 1950). Similarly, R-A theory recognizes people's entrepreneurial skills and organizations' entrepreneurial capabilities as organizational *resources*. In addition, however, it explicates the competitive process whereby such resources lead to economic change. Specifically, entrepreneurial capabilities produce economic dynamism when they produce proactive innovations that contribute to efficiency and/or effectiveness and when they result in marketplace positions of competitive advantage and, thereby, superior performance. Furthermore, R-A theory shows how, even in the absence of entrepreneurially oriented firms engaging in proactive innovation, competition ensures that market-based economic systems will still be dynamic.

Recall that R-A theory proposes that, at any point in time, competing firms are distributed throughout the nine cells of Figure 2 and that all firms seek the superior financial performance implied by cells 2, 3, and 6. Because all competing firms cannot have superior performance simultaneously, firms occupying positions of competitive disadvantage (cells 4, 7, and 8) must attempt to neutralize and/or

FIGURE 2
Competitive Position Matrix[a]

Relative Resource Costs \ Relative Resource-Produced Value	Lower	Parity	Superior
Lower	1 Indeterminate Position	2 Competitive Advantage	3 Competitive Advantage
Parity	4 Competitive Disadvantage	5 Parity Position	6 Competitive Advantage
Higher	7 Competitive Disadvantage	8 Competitive Disadvantage	9 Indeterminate Position

[a]The marketplace position of competitive advantage identified as Cell 3 results from the firm, relative to its competitors, having a resource assortment that enables it to produce an offering for some market segments that (1) is perceived to be of superior value and (2) is produced at lower costs.
Source: Adapted from Hunt and Morgan (1995).

leapfrog the advantaged competitor through reactive innovation: by better managing existing resources, obtaining the same or equivalent value-producing resource, and/or seeking a new resource that is less costly or produces superior value. The time required for reactive innovation to succeed depends on, among other things, the extent to which an advantaged firm's resources are protected by such societal institutions as patents and/or they are causally ambiguous, socially complex, tacit, or have time compression diseconomies (Barney 1991; Conner 1991; Dierickx and Cool 1989; Lippman and Rumelt 1982; Nelson and Winter 1982; Peteraf 1993; Reed and DeFillippi 1990; Wernerfelt 1984).

Note that both reactive and proactive innovation depend on higher-order, *complex* resources. Note also that unlike those dynamic theories that just assume there is exogenous heterogeneity in the change (or rates of change) of some variables or theories that require proactive innovation, R-A theory explicates the process that ensures endogenous competitive dynamism even in the absence of proactive innovation. Necessity, the mother of invention, ensures economic change in R-A competition.

Organizational Learning

Firms (attempt to) learn in many ways—by conducting formal marketing research, seeking out competitive intelligence, dissecting competitor's products, benchmarking, and test marketing. What R-A theory adds to extant work is how the process of competition itself contributes to organizational learning, as the feedback loops in Figure 1 show. Firms learn by competing as a result of feedback from relative financial performance signaling relative market posi-

tion, which, in turn, signals relative resources. Through competition, firms come to know (or believe they know) their relative resources and marketplace positions.

Although firms can investigate their relative marketplace positions and resources through specific research projects, two points should be noted. First, because neither the construct of *relative market position* nor of *relative resources* is directly observable, each must be inferred from other indicators (e.g., from the relative prices that a particular marketing offering commands and from the estimates of relative costs). Second, only relative, overall, financial performance can provide an indicator of the efficiency and/or effectiveness of the total assortment of resources that the firm uses to produce its market offerings. After all, it is the absence of such relative performance indicators in command economies that explains much of their low productivity:

> [S]ocialist planners lacked the means and motivation for discovering (a) the relative efficiency and effectiveness of extant resource assortments, (b) when and how to manage existing resources more efficiently and effectively, (c) when and where to seek alternative resource assortments, (d) when and where to redeploy existing resources, and (e) when and how to create new resource assortments (Hunt 1995, p. 327).

In short, by lacking the relative performance indicators of firms competing amongst themselves, planners in command economies lack an important source of learning: the means to know the relative efficiency and/or effectiveness of their state-owned organizations.

Our discussion of innovation, learning, and competitive dynamics can be placed in graphic relief by returning to the automobile industry example first used in H&M. In Figure 3, we show our interpretation of the competitive positions of automobile industry participants at various time-periods. In the 1970s and early 1980s, American manufacturers occupied cell 7 and Japanese car companies, which were producing superior value at lower costs, occupied cell 3. Mercedes-Benz and BMW occupied cell 6. The inferior financial performance of American companies, relative to the Japanese, prompted their attempts to learn the "secrets" of Japanese success.

FIGURE 3
Automobile Industry: Competitive Position Matrix

Relative Resource Costs \ Relative Resource-Produced Value	Lower	Parity	Superior
Lower	1 Yugo (1980s) Hundai (1980s–90s) Chrysler (1990s)	2 Ford (1990s)	3 Japan (1970s–80s)
Parity	4 GM (1990s)	5	6 BMW (1970s–80s) Mercedes (1970s–80s) Japan-AM (1990s)
Higher	7 GM (1970s–80s) Ford (1970s–80s) Chrysler (1970s–80s)	8	9 Japan (1990s) BMW (1990s) Mercedes (1990s)

Research pointed toward several factors that potentially contributed to the superior efficiency and effectiveness of Japanese car companies, including corporate cultures promoting teamwork, just-in-time inventory systems, the treatment of suppliers as partners, and total quality management procedures. The American car companies began instituting changes (i.e., reactive innovations). Did they learn the right things? Were their reactive innovations the correct ones? (R-A theory guarantees learning; it does not guarantee learning the right things.)

Since the late 1980s, it appears that all three American car manufacturers have lowered their resource costs to below that of Japanese cars made in Japan, with Chrysler now the lowest-cost producer (Lavin 1994; Suris 1996). In addition, BMW, Mercedes-Benz, and the Japanese car companies have shifted to cell 9 as a result of their higher relative costs. But, though all three American car companies continue to improve in overall reliability, none has yet learned how to match the reliability of Japanese nameplates—whether assembled in Japan or the United States (Keller 1993). In R-A theory terms, the resources that Japanese car companies rely on continue to be imperfectly imitable by their American competitors.

In summary, as regards questions 1–2, R-A theory not only incorporates the dynamic assumptions of Dickson's work, but it also shows explicitly how the process of competition motivates proactive and reactive innovation, thus ensuring that competition will be dynamic. Furthermore, R-A theory not only incorporates Dickson's higher-order learning processes as complex resources that can yield marketplace positions of competitive advantage and, thereby, superior financial performance, but it also shows precisely how firms learn from the very process of competition itself—even in the absence of having mastered higher-order learning processes. As such, R-A theory highlights managerial implications, as well as important public policy issues facing market-based economies. For example, are firms paying attention to the financial indicators that result in an economic system that best contributes to long-term productivity and economic growth? Are firms learning the right things? Indeed, what are the things that we, as a society, want them to learn?

Path Dependencies and Resource-Advantage Theory

Path dependencies play a crucial role in Dickson's theory because, for him, they "reflect the adoption of more efficient design, manufacturing, physical distribution, communication processes, and management systems" (p. 105) and contribute to explaining the superior efficiency of market-based economies. However, the subject of path dependencies is much more contentious than Dickson's discussion suggests.[2]

[2]This is no criticism of Dickson, but a recognition of the page limitations of *JM* comments.

Since the works of David (1985) and Arthur (1989), path dependencies in economic systems have been much discussed. A path dependency occurs in an economic system when a "sequence of economic changes is one of which important influences upon the eventual outcome can be exerted by temporally remote events, including happenings dominated by chance elements rather than systematic forces" (David 1985, p. 332). The import of path dependencies is that history is important in the actual development of economies. Path-dependant processes occur because of the *network effect*, that is, when the benefit of consuming a good or adopting a technology varies directly with the number of others who consume the good or adopt the technology (Katz and Shapiro 1985). Two common examples of alleged path dependencies resulting from network effects are the adoption of the VHS (over the Beta) format in video cassette recorders and the continued use of the QWERTY over the DSK (Dvorak) keyboard.

It is undisputed that individual firms embark on paths wherein there are "systemic negative or positive feedback effects" (Dickson 1996, p. 103). (Indeed, such path dependencies occur in both market-based and command economies, for in both there are positive and negative feedback effects.) What is greatly disputed is the effect of such path dependencies on the overall performance of economic systems.

The customary interpretation of path dependencies resulting from network effects is that they pose externalities that result in a technological lock-in of an inferior technology, which prevents market-based economies from evolving toward the most efficient technologies. Therefore, in contrast with Dickson's claim that path dependencies are crucial for explaining the superior efficiency of market-based economies, economic theorists customarily argue that path-dependency externalities *prevent* unregulated market-based economies from achieving optimal efficiency. Hence, government intervention is required "because there is no guarantee that efficient firms will actually be selected in a competitive, evolutionary process" (Hodgson 1993, p. 209).

The normal counterargument to this view is that path dependencies are empirically rare. For example, Liebowitz and Margolis (1990, 1994, 1995, 1996) present strong, perhaps compelling, evidence that neither the QWERTY nor the VHS technologies were then (or now are) inferior to DSK and Beta, respectively: "The typewriter keyboard appears to be the best example where luck caused an inferior product to defeat a superior product. The story, though charming, is false" (Liebowitz and Margolis 1996, p. 31). Therefore, because the "best" examples of alleged path-dependency externalities are empirically false myths, they question whether path dependencies are a serious problem for market-based economies at all. Indeed, after distinguishing between harmless and harmful path dependencies, they (1995) provide a theoretical justification for the scarcity of real-world examples of the harmful variety.

How the literature on path dependencies will sort out is unknown. Nonetheless, we can inquire how R-A theory accommodates path dependencies, whether they result in efficiency as Dickson proposes, whether they result in inefficiencies as many economic theorists (and the popular press) presently contend, or even whether they are rare, nonproblematic, charming stories as some recent empirical works conclude. We argue that R-A theory fully accommodates the possibility of path dependencies because it is an evolutionary, nonconsummatory theory of competition.

Evolutionary Economics and Resource-Advantage Theory

Evolutionary economics has a long and distinguished pedigree. Even Marshall (1898, p. 43), one of the founders of neoclassical economics, viewed his equilibrium models as only an intermediate stage in the development of economic science: "And, therefore, in the later stages of economics, ... biological analogies are to be preferred to the mechanical." Indeed, he later referred to much of equilibrium modeling in economics as a "scientific toy" (Marshall 1925, p. 460). After a half century of, in Foss's (1991) words, suppression, process theories in economics began to grow rapidly following the seminal work of Nelson and Winter (1982). But not all process theories are evolutionary.

Dosi and Nelson (1994) and Nelson (1995) identify three key building blocks for a process theory to be evolutionary: (1) units of selection, (2) mechanisms that do the selecting, and (3) selection criteria. Of the different kinds of evolutionary theories, Hodgson (1993) points out that Lamarckian evolutionary processes differ from Darwinian ones because the former, but not the latter, admits the possibility of the inheritance of acquired characters. He also notes that ontogenetic theories, which focus on a set of given and unchanging entities, differ from phylogenetic theories, which focus on the "complete and ongoing evolution of the population, including changes in its composition" (p. 40). He then distinguishes phylogenetic, consummatory theories that have end-stages of "finality or consummation" (p. 44) from nonconsummatory theories that permit never-ending evolution. Furthermore, for those theories that sort through natural selection, the units of selection must be fairly durable and heritable, and the selection process must involve a "struggle for existence" that "encompasses a renewable source of variety and change" (p. 48) that results in the survival of the "fitter," not necessarily the "fittest" (p. 50).

In a provocative essay, Hodgson (1992) points out that both neoclassical economic theory and Marxism are claimed as consummatory: In the former, the end-stage of perfection is a Pareto-optimal, general equilibrium, which is reached by groping. In the latter, the same Pareto-optimal state of perfection is reached by a state planning board solving the "Walrasian equations" directly. Indeed, when socialist economies were argued to be at least as efficient as market-based ones because they would solve the Walrasian equations directly, neoclassical economists specializing in comparative economic systems uniformly agreed that the arguments of socialist economists were based on sound theoretical analysis (Hunt 1995; Lavoie 1985). Because both are argued to be consummatory, neither neoclassical theory nor Marxism permit path dependencies. In contrast, because the selection process in R-A theory focuses on the "locally fitter," it is nonconsummatory and permits path dependencies.

Specifically, we argue that R-A theory is a phylogenetic, nonconsummatory, evolutionary theory of competition, in

which firms and resources are the heritable, durable units of selection, and competition among firms is the selection process that results in the survival of the locally fitter, not the universally fittest.[3] In brief, because firms can acquire resources, using firms and resources as units of selection means that R-A theory is Lamarckian. The selection process is locally fitter because it results in the survival of resources and firms that are, relative to particular competitors, more efficient and/or effective at a point in time in producing market offerings for particular market segments. The renewable source of variety and change is the pursuit of superior financial performance through a comparative advantage in resources that leads to marketplace positions of competitive advantage. Because not all firms can have superior performance at the same time, the source of change is *renewable*, which makes competition an ongoing, never-ending, nonconsummatory process that permits path dependencies—Q. E. D.

Endogenous Growth Models and Resource-Advantage Theory

Many of those contacting us have inquired how R-A theory relates to endogenous growth models, such as those of Romer (1986, 1990, 1993a, b, 1994), Aghion and Howitt (1991), Grossman and Helpman (1991, 1994), Stokey (1991), and Young (1991, 1993). The neoclassical growth model, for which Solow (1956) won the Nobel prize, viewed the capital-labor ratio as the key endogenous variable for explaining economic growth. However, endogenous growth theorists point out that empirical works show that technological progress accounts for most economic growth. Accordingly, with Solow's (1994) concurrence, these theorists model the process of competition that produces the innovations that result in technological progress and, in turn, economic growth.

These new models imply a theory of economic growth similar to Schumpeter's (1950), in which technological progress must be endogenous. The essentials of the theory, in neoclassical terminology, are the following:

- Certain aspects of the process of monopolistic competition, including the rational expectation of rents, engender innovative ideas at the firm level.
- These competition-induced innovations, through time, result in both firm- and industry-level technological changes.
- These technological changes, by cumulatively increasing total factor productivity for the economy, constitute the technological progress that accounts for economic growth.
- Thus, the process of monopolistic competition induces technological progress through time and results in economic growth.

Endogenous growth models have two major implications for economic theory. First, if economic growth is a desirable characteristic of an economic system, then "perfect" competition, rather than being an ideal state toward which public policy should aim, is an *undesirable* state. Second, because neither Chamberlin's (1933) nor Robinson's (1934) theory views competition as a process in which innovation results in technological progress, no neoclassical theory of competition provides a theoretical foundation for endogenous growth models.

Although space limitations prevent a full discussion here, we maintain that R-A theory relates to endogenous growth models by theoretically grounding them.[4] In brief, it does so because R-A theory

1. views competition as an evolutionary process in real-time (rather than as a static process),
2. views technology as a nonrival, partially excludable resource in the production process (rather than as a production function freely available to all firms),
3. views innovation as an outcome of the process of competition (rather than as exogenous to competition),
4. views firms as having the rational expectation that superior financial performance results from innovations that contribute to efficiency and/or effectiveness (rather than viewing superior performance as constituting rents resulting from market imperfections), and
5. views societal institutions (e.g., the patent system) as potentially facilitating or inhibiting competition-induced growth (rather than as being superfluous to competition).

Perfect Competition and Resource-Advantage Theory

How should theories be evaluated? Since Friedman's (1953) famous defense of neoclassical theory, the standard view in economics has been the instrumentalist position that, because theories are just instruments for making predictions, the realism of a theory's assumptions is irrelevant. Only a theory's ability to make successful predictions is important: "[E]conomics is held to be only a 'box of tools,' and empirical testing can show, not so much whether models are true or false, but whether or not they are applicable in a given situation" (Blaug 1992, p. 110).

Although instrumentalism makes it improper to inquire about any neoclassical theory's truth or falsity, it is still permissible to ask, When a theory such as perfect competition predicts well, why does it do so? Friedman (1953) provides two answers: First, his "close enough" argument maintains that a neoclassical theory predicts well when its assumptions are sufficiently good approximations to the economic circumstances. Second, a neoclassical theory predicts well when the process of competition works as if the assumptions were true. For example, Friedman argues that because only the fittest survive, the process of competition ensures that those firms that do not maximize profits will, in the long-term, be squeezed out by the profit-maximizing firms. Therefore, the result is *as if* firms maximized. The as if argument, it must be noted, invokes an evolutionary, process view of economic systems (Hodgson 1993).

As Blaug (1992) and Hodgson (1993) note, neoclassical theory cannot be defended cogently by simply invoking the evolutionary metaphor and then claiming that natural selection will guarantee economic results as if the firms maximized. As Blaug (1992, p. 103) explains, "[W]e can no more

[3]For more on the evolutionary status of R-A theory, see Hunt (forthcoming).

[4]See Hunt (1996) for a discussion of how R-A theory can theoretically ground endogenous growth models.

establish from natural selection that surviving species are perfect than we can establish from economic selection that surviving firms are profit maximizers." What neoclassical theory requires is a theory of competition that explicates the process whereby certain economic circumstances could potentially result in predictions consistent with neoclassical theory. We argue that R-A theory is a process theory that can explain when neoclassical theory will (and will not) predict successfully, because R-A theory incorporates perfect competition as a limiting, special case.

Space limitations prevent a full discussion of the incorporation issue here.[5] In brief, however, readers can verify for themselves that R-A theory incorporates the foundational propositions of neoclassical theory as limiting, special cases (see Table 1 in H&M). Furthermore, readers also can envision economic circumstances wherein firms tend to gravitate toward having parity resources producing parity marketplace offerings, which result in parity marketplace positions and parity financial performance. A key circumstance (as we discussed in the section on endogenous growth) is that all competition-induced innovation ceases and, therefore, all competition-induced technological progress and economic growth stops.

Because R-A theory incorporates perfect competition as a limiting, special case, it not only explains when perfect competition theory will be "close enough" to predict well, but it also subsumes, by implication, the extant predictive successes of neoclassical theory. In so doing, R-A theory preserves the cumulativeness of economic science—a desirable characteristic of any general theory of competition (Nelson 1995).

Conclusion

We thank Dickson for his insightful comments. They have contributed to explicating R-A theory's structure, foundations, and implications. As it stands now, R-A theory has been shown to

1. explain firm diversity,
2. explain differences between market-based and command economies on the dimensions of productivity, quality, and innovativeness,
3. be genuinely dynamic,
4. provide a theoretical foundation for endogenous growth models,
5. have all the requisite building blocks and attributes of a phylogenetic, nonconsummatory, evolutionary theory,
6. accommodate path dependencies,
7. incorporate perfect competition as a limiting, special case,
8. incorporate the predictive successes of neoclassical theory, and
9. preserve the cumulativeness of economic science.

The preceding notwithstanding, R-A theory is still very much a work in progress. For example, no rival other than perfect competition theory has been provided against which R-A theory can be compared on a point-by-point basis. To those who believe that perfect competition was a straw man rival and to those who believe that R-A theory is wrong, too limited, or misguided, we ask the following: Propose the structure of a rival theory, complete with its foundational propositions, against which R-A theory can be compared. Alternatively, we ask for proposals for modifications, additions, or deletions to our foundational propositions and structure. On the other hand, to those who believe that R-A theory has merit, we ask that they, like Dickson (1996), propose elaborations, extensions, and applications of R-A theory; develop its strategic and public policy implications; or conduct empirical tests. Much needs to be done.

Finally, we thank all those who have expressed strong interest in R-A theory. Not only researchers, but students of marketing, of the other business disciplines, and—yes—of economics deserve a richer theory than they are now receiving. Let us get on with developing and disseminating it.

[5]See Hunt (1996) for a discussion of how R-A theory incorporates perfect competition.

REFERENCES

Aghion, Phillippe and Peter Howitt, (1991), "A Model of Growth Through Creative Destruction," *Econometrica*, 60 (March), 322–52.

Arthur, W. Brian (1989), "Competing Technologies, Increasing Returns, and Lock-in by Historical Events," *Economic Journal*, 99 (1), 116–31.

Barney, Jay (1991), "Firm Resources and Sustained Competitive Advantage," *Journal of Management*, 17 (1), 99–120.

Blaug, Mark (1992). *The Methodology of Economics*. Cambridge: Cambridge University Press.

Chamberlin, Edward (1933/1962), *The Theory of Monopolistic Competition*. Cambridge, MA: Harvard University Press.

Conner, Kathleen (1991), "A Historical Comparison of Resource-Based Theory and Five Schools of Thought Within Industrial-Organization Economics: Do We Have a New Theory of the Firm?" *Journal of Management*, 17 (March), 121–54.

David, Paul A. (1985), Clio and the Economics of QWERTY," *American Economic Review*, 75 (2) 332–37.

Day, George S. (1994), "Continuous Learning About Markets," *California Management Review*, 36 (Summer), 9–31.

Dickson, Peter Reid (1992), "Toward a General Theory of Competitive Rationality," *Journal of Marketing*, 56 (January), 69–83.

——— (1996), "The Static and Dynamic Mechanics of Competition: A Comment on Hunt and Morgan's Comparative Advantage Theory," *Journal of Marketing*, 60 (October), 102–106.

Dierickx, Ingemar and Karel Cool (1989), "Asset Stock Accumulation and Sustainability of Competitive Advantage," *Management Science*, 35 (December), 1504–11.

Dosi, Giovanni and Richard Nelson (1994), "An Introduction to Evolutionary Economic Theories," *Journal of Evolutionary Economics*, 4 (September), 153–72.

Foss, Nicolai J. (1991), "The Suppression of Evolutionary Approaches in Economics: The Case of Marshall and Monopolistic Competition," *Methodus*, 3 (December), 65–72.

Friedman, Milton (1953), *Essays in Positive Economics*. Chicago: University of Chicago Press.

Glazer, Rashi (1991), "Marketing in an Information-Intensive Environment: Strategic Implications of Knowledge as an Asset," *Journal of Marketing*, 55 (October), 1–19.

Grossman, Gene and Elhanan Helpman (1991), *Innovation and Growth in the Global Economy*. Cambridge, MA: MIT Press.

——— (1994), "Endogenous Innovation in the Theory of Growth," *Journal of Economic Perspectives*, 8 (Winter), 23–44.
Hodgson, Geoffrey (1992), "The Reconstruction of Economics: Is There Still a Place for Neoclassical Theory?" *Journal of Economic Issues*, 26 (September), 749–67.
——— (1993), *Economics and Evolution*. Ann Arbor, MI: University of Michigan Press.
Hunt, Shelby D. (1995), "The Resource-Advantage Theory of Competition: Toward Explaining Productivity and Economic Growth," *Journal of Management Inquiry*, 4 (December), 317–32.
——— (1996), "The Evolutionary and Neoclassical Traditions in Economics: Towards Narrowing the Gap," unpublished working paper, Marketing Department, Texas Tech University.
——— (forthcoming), "Resource-Advantage Theory: An Evolutionary Theory of Competitive Firm Behavior?" *The Journal of Economic Issues*.
——— and Robert M. Morgan (1995), "The Comparative Advantage Theory of Competition," *Journal of Marketing*, 59 (April), 1–15.
Jacobson, Robert (1992), "The Austrian School of Strategy," *Academy of Management Review*, 17 (4), 782–807.
Katz, Michael L. and Carl Shapiro (1985), "Network Externalities, Competition, and Compatability," *American Economic Review*, 75 (3) 424–40.
Keller, Mary Ann (1993), *Collision: GM, Toyota, Volkswagen and the Race to Own the 21st Century*. New York: Currency Doubleday.
Kirzner, I. M. (1979), *Perception, Opportunity and Profit: Studies in the Theory of Entrepreneurship*. Chicago: The University of Chicago Press.
Lavin, Douglas (1994), "Chrysler Is Now Lowest-Cost Producer in Auto Industry, Harbour Report Says," *Wall Street Journal*, (June 23), B3.
Lavoie, Don (1985), *Rivalry and Economic Planning: The Socialist Calculation Debate Reconsidered*. Cambridge: Cambridge University Press.
Liebowitz, S. J. and Stephen E. Margolis (1990), "The Fable of the Keys," *Journal of Law and Economics*, 33 (April), 1–25.
——— (1994), "Network Externality: An Uncommon Tragedy," *Journal of Economic Perspectives*, 8 (2), 133–50.
——— (1995), "Path Dependence, Lock-In, and History," *Journal of Law Organization and History*, 7 (1), 205–26.
——— (1996), "Typing Errors," *Reason*, (June), 29–35.
Lippman, S. A. and R. P. Rumelt (1982), "Uncertain Imitability," *Bell Journal of Economics*, 13, 418–38.
Marshall, Alfred (1898), "Distribution and Exchange," *Economic Journal*, 8 (1), 37–59.
——— (1925), *Principles of Economics*, 8th ed. London: MacMillan.
Nelson, Richard R. (1995), "Recent Evolutionary Theorizing About Economic Change," *Journal of Economic Literature*, 33 (March), 48–90.
——— and Sidney G. Winter (1982), *An Evolutionary Theory of Economic Change*. Cambridge, MA: Belknop Press.
North, D. C. (1990), *Institutions, Institutional Change, and Economic Performance*. Cambridge: University of Cambridge.
Peteraf, Margaret A. (1993), "The Cornerstones of Competitive Advantage: A Resource-Based View," *Strategic Management Journal*, 14 (3), 179–91.
Reed, Richard and Robert J. DeFellippi (1990), "Causal Ambiguity, Barriers to Imitation, and Sustainable Competitive Advantage," *Academy of Management Review*, 15 (January), 88–117.
Robinson, Joan (1934), *The Economics of Imperfect Competition*. London: Macmillan.
Romer, Paul M. (1986), "Increasing Returns and Long-Run Growth," *Journal of Political Economy*, 94 (October), 1002–37.
——— (1990), "Endogenous Technological Change," *Journal of Politician Economy*, 98 (5), 71–102.
——— (1993a), "Idea Gaps and Object Gaps in Economic Development," *Journal of Monetary Economics*, 32, 543–73.
——— (1993b), "Two Strategies for Economic Development: Using Ideas and Promoting Ideas," in *Proceedings of the World Bank Annual Conferences on Development Economics 1992*, New York: World Bank, 63–115.
——— (1994), "The Origins of Endogenous Growth," *Journal of Economic Perspectives*, 8 (Winter), 3–22.
Schumpeter, J. A. (1950), *Capitalism, Socialism and Democracy*. New York: Harper & Row.
Sinkula, James M. (1994), "Market Information Processing and Organizational Learning," *Journal of Marketing*, 58 (January), 34–45.
Solow, R. M. (1956), "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics*, 70 (February), 65–94.
——— (1994), "Perspectives on Growth Theory," *Journal of Economic Perspectives*, 8 (Winter), 45–54.
Stata, Ray (1989), "Organizational Learning—The Key to Management Innovation," *Sloan Management Review*, 30 (Spring), 63–74.
Stokey, Nancy (1991), "Human Capital, Product Quality, and Growth," *Quarterly Journal of Economics*, 106 (May), 587–616.
Sujan, Harish, Barton Weitz, and Nirmalya Kumar (1994), "Learning Orientation, Working Smart, and Effective Selling," *Journal of Marketing*, 58 (3), 39–52.
Suris, Oscar (1996), "Chrysler Ranks Highest in Efficiency Among Big Three, But All Trail Japan," *Wall Street Journal* (May 30), A2.
Wernerfelt, B. (1984), "A Resource-Based View of the Firm," *Strategic Management Journal*, 5, 171–80.