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Sociocognitive Dynamics in a Product Market

In this article, the authors explore the origins and evolution of product markets from a sociocognitive perspective. *Product markets* are defined as socially constructed knowledge structures (i.e., product conceptual systems) that are shared among producers and consumers—sharing that enables consumers and producers to interact in the market. The fundamental thesis is that product markets are neither imposed nor orchestrated by producers or consumers but evolve from producer–consumer interaction feedback effects. Starting as unstable, incomplete, and disjointed conceptual systems held by market actors—which is revealed by the cacophony of uses, claims, and product standards that characterize emerging product markets—product markets become coherent as a result of consumers and producers making sense of each other's behaviors. The authors further argue that the sensemaking process is revealed in the stories that consumers and producers tell each other in published media, such as industry newspapers and consumer magazines, which the authors use as data sources. Specific hypotheses pertaining to the use of product category labels in published sources and the acceptability of different product category members throughout the development process are tested for the minivan market between 1982 and 1988. The findings suggest that category stabilization causes significant differences between consumers and producers in how they use product category labels for emerging and preexisting categories. The findings also show that, as stabilization occurs around a category prototype, the acceptability of particular models changes without any physical changes to the models.

The notion of "product markets" is fundamental to marketing theory. Product markets are regarded as the meeting grounds for buyers and sellers of goods (e.g., Robinson 1933). They are the bounded arenas in which prices and quantities for substitutable goods and services are negotiated by consumers and producers and are separated from other bounded arenas by gaps in demand between the product groupings. Considerable attention has been given to product market structure and the boundaries between product categories from cognitivist (e.g., Day and Negundadi 1994; Wedel and Steenkamp 1991*) and organizational (e.g., Myers and Tauber 1977*; Porter 1980) perspectives. Research also has attended to consumer and producer roles in defining product market structure (e.g., Day, Shocker, and Srivastava 1979; Ratneshwar and Shocker 1991) and the dynamic forces at play within product market boundaries (e.g., Dickson 1992). The study of product markets remains important as the marketing field ponders questions such as how markets function and evolve, whether market boundaries are distinct and stable or shifting and overlapping, and how new products diffuse into new markets.[1] This study seeks to shed some light on these and related questions.

Because product markets are intuitively appealing, it is easy to forget they are nothing more than theoretical constructs, developed and agreed to by market actors to make sense of producer and consumer behaviors. In medieval times, the label "market" was imposed on a place and time conjunction—perhaps the town square on Saturday morning—at which buyers and sellers agreed to meet for trade and conversation (Braudel 1982). Modern product markets are no longer as constrained by time or place but instead are agreed-on loci of transactions with few if any physical markers. Without tangible manifestations, agreement on the existence and boundaries of modern markets must be inferred from fuzzy signals and stories about assumed structures of supply and demand (e.g., McCloskey 1985), but they remain social constructions whose meanings emerge from buyer–seller agreement, and their inferred nature makes them inherently equivocal.

In the automobile market, for example, producers market varieties of car- and trucklike vehicles, and consumer demand is not equally satisfied by all available models. To make sense of such observations, people erect conceptual boundaries that cluster easily substitutable models into the same product categories (e.g., minivans, pickup trucks) and distinguish them from less substitutable groupings. Imposed boundaries and product categories seem comfortable to consumers and producers, largely because they are the natural

*Authors were limited in the number of references used in text, therefore, those references marked with an * are available at www.ama.org/pubs/jm and at www.msi.org.

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[1]These questions are from the call for papers for this Special Issue.

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outcome of how people make sense of incomplete and imperfect market cues. They are no different than the categorization schemes people impose on stimuli from other areas of their lives (Mervis and Rosch 1981*). Sometimes product categories are elevated to a quasi-formal status, such as when they are legitimized by the actions of government (e.g., National Highway Transportation Safety Agency), industry (e.g., National Automobile Dealers Association), and consumer organizations (e.g., Consumers Union). In spite of these institutional trappings, however, product market boundaries and categories remain largely retrospective explanations of the activities of market actors, who themselves often behave as if they are oblivious of the boundaries' existence (e.g., consumers often use pickup trucks as family vehicles). Thus, while product market representations appear relatively stable, they undergo constant recalibration.

We believe that, to be complete, a theory of product markets based on gaps in demand must account for more than the differences in demand cross-elasticity between goods within versus across product market boundaries (Auerbach 1988). Such a theory also must account for how these taken-for-granted constructs called product markets come to exist and how they become stable enough to be tacitly understood and acted on by market actors while remaining sufficiently flexible to assimilate the diverse stream of activities that these actors generate.

In this article, we address some of these evolutionary concerns by arguing for a view of product markets as dynamic sociocognitive phenomena. By this, we mean that product markets are determined primarily by dynamic consensual knowledge structures that (1) define the goods being exchanged and (2) coordinate transactional relationships between producers and consumers within market networks. In this view, much of what consumers and producers know of product markets resides in the knowledge structures shared by these two parties, and their understanding of markets evolves solely as these knowledge structures change. By focusing on shared knowledge structures and their development, a sociocognitive approach helps us address some aspects of how markets function and evolve by integrating extant marketing research on product categorization (e.g., Cohen and Basu 1987; Sujan 1985) with research on market dynamics (e.g., Arthur 1990; Dickson 1992, 1996; Forrester 1961*; White 1981).

Marketing scholars have been interested in product market evolution since the introduction of the product life cycle concept in the 1920s. As Gardner (1987) points out in his extensive review, however, evidence for life cycle arguments is contradictory, and the concept itself is more a metaphor than an empirically grounded theoretical construct. Only recently have scholars gone beyond life cycle metaphors to address market dynamics with a set of explicit theoretical tools. Lambkin and Day (1989) advance a view of product market evolution using organizational ecology as the theoretical lens. Although their approach improves on the product life cycle metaphor, an ecological analysis takes the existence of market boundaries and categories for granted. Ecological models work when category boundaries are stable and commonly understood by market actors. To the extent that market evolution involves periods of instability in such boundaries (e.g., changes to product category membership criteria), ecological analysis falls short as an approach to market dynamics. Dickson's (1992, 1996; Dickson, Farris, and Verbeke 1999) dynamic systems approach and complementary research on dominant design (e.g., Clark 1985*; Suárez and Utterback 1995; Utterback and Suárez 1993) perceive consumer and producer preferences as ever changing. These streams of research have not delved, however, into the role that evolving consumer and producer knowledge structures play on such market dynamics. Our sociocognitive approach helps explain the development of consumer and producer knowledge structures and show their role in market evolution.

To substantiate our arguments, we examine the early development of the minivan product category. Boxy vehicles designed for the purpose of transporting people (i.e., families) in comfort have a long history in the global automotive industry. These "people movers" did not become highly popular in the United States, however, until Chrysler announced plans for a line of small, front-wheel–drive vans in the early 1980s. Chrysler's prototypes crystallized what had been a nascent and unnamed market for such vehicles and prompted the J.D. Power and Associates market research firm to introduce the "minivan" category label in 1982. The minivan market's evolution during the last 16 years stands as an excellent example of product competition in a differentiated characteristics space. In our analysis, we delve behind modern-day attributions of producer brilliance or stupidity to examine the shared knowledge that defined the minivan market as it developed. Our arguments unfold in five parts. We begin by explaining why product markets are cognitive phenomena and how they are socially constructed. Then, we present hypotheses as to how the sociocognitive evolution of product markets is revealed in producer and consumer stories and behaviors. We present details of the study and the results subsequently. Finally, we discuss some theoretical and practical implications of our study for contemporary marketing thought and research into the twenty-first century and the study's limitations.

Product Markets as Dynamic Cognitive Orderings

Consumers and producers determine the substitutability of products and services on the basis of context-driven demands, because consumer demands are rooted in usage conditions and the choices available (Day, Shocker, and Srivastava 1979; Ratneshwar and Shocker 1991), whereas producer demands stem from competitive positioning (Porac et al. 1995; White 1981). The family car category, for example, is exemplified globally by different vehicles, such as the Fiat Panda minicar in Brazil and the Dodge Caravan minivan in the United States, depending on the socially agreed on transportation needs of typical families and the vehicle choices available. In each market, the family car category appears stable and is used by consumers and producers to make sense of existing and new market entries, yet consumer and producer behaviors with respect to this category are highly flexible. Brazilian consumers who move to the United States, for example, easily shift their

definitions of family cars to exclude Pandas and include Dodge Caravans, and U.S. consumers going to Brazil seem to have little trouble embracing Pandas as the vehicle of choice. Similarly, producers that enter either market will reposition their product offerings to fit the locally agreed on market definitions. We suggest that product categories such as "family car" appear to be both static and dynamic in this fashion because they are socially constructed cognitive orderings. These orderings are sustained by market actors, who are responding in similar and complementary ways to the same stimuli, and evolve as market actors assimilate changes through social interaction. The cognitive orderings have sufficient structure to appear sensible and coherent, yet are flexible enough to accommodate the ambiguous stream of market stimuli that consumers and producers encounter daily.

The notion of product categories as cognitive orderings is not new to marketing or other research fields that are concerned with product markets. Consumer researchers, for example, have explored the graded or fuzzy structure of product categories (Loken and Ward 1990*; Viswanathan and Childers 1999) and the influence of mismatches between a category prototype and specific products on information processing and product evaluations (Meyers-Levy and Tybout 1989; Sujan 1985). Research also has argued against the strict dichotomy between feature- or exemplar-based categorization by consumers, proposing instead that both mechanisms are active in their judgments and decisions (Cohen and Basu 1987). Further research has shown that consumers hold category representations at multiple abstraction levels, to which they sometimes link the same products when making choice decisions in different contexts (Johnson 1988*). At a more macro level, researchers have used product categories to explain first-mover advantage (Carpenter and Nakamoto 1989), strategic management (Dutton and Jackson 1987*), and firm strategic positioning within single industries (Porac et al. 1995).

Implicit in such research are several assumptions. First, the existence of product categories is not questioned. Experimental studies of product categorization (e.g., Sujan 1985) thoroughly pretest the categories used, and field studies (e.g., Porac et al. 1995) focus on well-known categories. In spite of admonitions to the contrary (e.g., Cohen and Basu 1987), practically all research that explores product categories focuses on those that already exist, and it typically does not inquire into the categories' origins or evolution.

Second, the substitutability of any two products is determined by their similarity on the attributes that define their category or the usage conditions to which they are applied, even if the products differ on other attributes or use applications. The Chevrolet Corvette and Acura NSX, for example, are typically regarded as sports car substitutes because they are fast, two-seat cars with sleek styling and powerful engines, even though they are different in practically all their engineering attributes (e.g., engine size and location, weight-to-horsepower ratio). Likewise, a Ford Explorer and Chevrolet Suburban often are viewed as substitute family vehicles, but they are noncomparable alternatives in cargo hauling applications. How do consumers come to know what gives sports cars and sport utility vehicles their identity? How do they filter the incongruencies between different models on the basis of context? We have recognized that product categories have fuzzy boundaries (Viswanathan and Childers 1999), but the complex knowledge structures underlying the labeling of products are understood only partially.

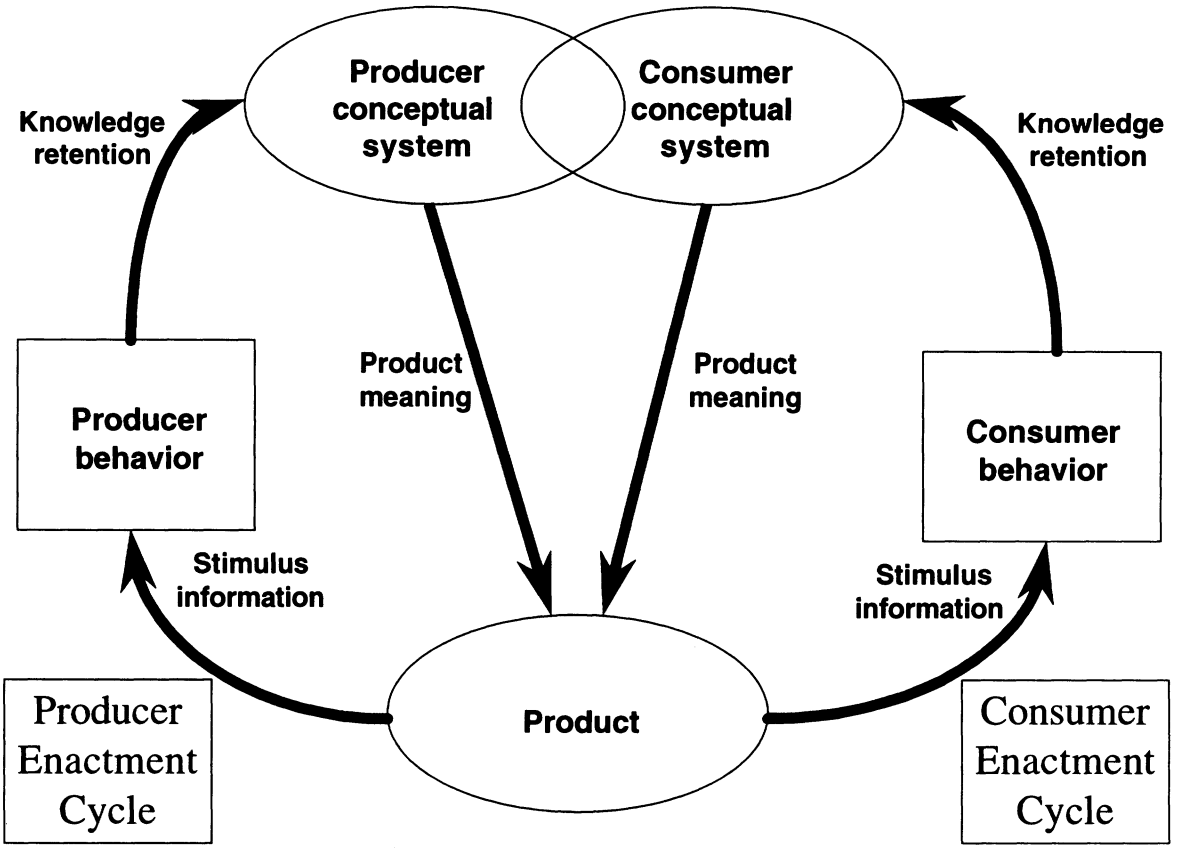
Third, the research accepts implicitly that the knowledge structures that guide producers and consumers intersect along many dimensions. Researchers generally do not ask how producers and consumers come to understand each other's demands and claims regarding a specific product, nor do they question their general agreement on product category definitions (e.g., sports cars are fast, two-seat vehicles). At the same time, however, researchers readily accept that consumers and producers bring different perspectives to the market, with consumers being focused primarily on benefits and usage conditions, whereas producers are interested in the technicalities of marketing products profitably. With such different perspectives on products, how does knowledge about product categories come to be shared?

A Sociocognitive View of Product Markets

The framework we use to represent the sociocognitive dynamics of product markets is captured in Figure 1. We view consumers and producers as networked actors who are bound together in equivocal transactions that are stabilized by their shared assumptions and frames of reference (Fligstein 1996; White 1981). Transactions are equivocal because producers and consumers have imperfect knowledge of each other's preferences and capabilities, which leads to the misunderstandings and corrections that mark practically all markets. In spite of their equivocality, markets exist primarily because market actors agree on their existence. This self-correcting system of equivocal transactions and shared knowledge structures revolving around a physical stimuli configuration (i.e., product) is a sociocognitive market system (see Figure 1).

In the sociocognitive view, *products* are tangible manifestations of informational cues that attach to definitions and become commonly understood and taken for granted. Products do not refer to stable "things out there" but to the "here-and-now" flows of stimulus information that affect the senses of market actors. Consumers and producers, for example, interact around the Dodge Caravan, which current-day market actors agree is a tangible manifestation of the minivan category. But absent considerable shared knowledge, the product around which exchange occurs is merely an ambiguous stimulus configuration of color, shape, sound, and smell. The stimulus configuration becomes the "Dodge Caravan" by being linked to a mental representation that is so labeled, a representation that in this case was initiated and disseminated by Chrysler Corporation and its dealers and assimilated by consumers and other producers. This representation is what links the Dodge Caravan and its attributes to possible usage conditions, derived benefits, and competitive concerns (Day, Shocker, and Srivastava 1979; Porac et al. 1995). The Caravan becomes a "minivan" when its representation is abstracted with those of experientially similar

FIGURE 1
A Sociocognitive Market System



products (e.g., Toyota Vans, Volkswagen Vanagons), and a category label evolves (i.e., "minivan") to summarize these products in relation to other product groups (e.g., station wagons, cars, trucks).

Product Market Conceptual Systems

Products of one type can be distinguished from those of another type to the extent that there are gaps of attributes between them (i.e., differences among the conceptual clusterings of attributes that are commonly understood to represent the products). In our view, attributes do not exist on their own either. They are derived inductively through observation and interaction with products. The use and observation of products are idiosyncratic and dependent on a person's vantage point and observational goals. Over time though, as social interactions between producers and consumers take place, an explicit attribute nomenclature evolves to capture consensually understood aspects of the stimulus array. When an attribute nomenclature and category label are agreed on for a stimulus array, the producer and consumer conceptual systems have "stabilized" (see Figure 1), and specific product renditions or models that are linked to the shared conceptual systems become product category members. Minivans, for example, have come to be defined as an array of such attributes as "front-wheel drive," "low step-in height," "seven passenger," and "cargo space large enough for a 4 × 8 sheet of plywood between the wheel wells." This relatively stable attribute nomenclature is part of the minivan conceptual system. Furthermore, whereas the Dodge Caravan is a member of the minivan category, the GMC Suburban is not. In like manner, red wines are associated with "rich textures," "plum notes," and "legs," and whereas a Rothschild Cabernet is a member of the category, a Seagram's Passion Fruit Cooler is not.

Consumers and producers bring their product conceptual systems to bear on market interactions. They use their conceptual systems to enact meaning for the physical artifacts they encounter and to link the products to usage conditions and production or profit concerns. While products are given structure and meaning by existing conceptual systems, however, the diversity and ambiguity of market conditions give rise to novel experiences and perspectives on product usage and marketing. These experiences update conceptual systems by providing endogenous and exogenous disturbances. For consumers and producers, therefore, market behaviors and conceptual systems shape each other (see Figure 1).

Following Weick (1979), *enactment* means that shared product market orderings evolve from the activities of market actors who are coupled in behavior–cognition cycles. Producers and consumers enact markets through both their behaviors in response to environmental circumstances (e.g.,

specific product designs, consumption habits, marketing strategies) and their interpretations (e.g., retrospective explanations of cause–effect relationships) of the market's response to those behaviors. Both behavior and cognition are essential elements in the process.

Enactment alters both the actor and the environment, making consumers and producers simultaneously market makers and market takers. One important implication of enactment is that it builds agreement among producers and consumers on how specific products are categorized. Rising agreement, in turn, stabilizes the market by facilitating information flow, thus expediting the assimilation of new product models and new uses for old products. Consumers know what to do with new products (e.g., the 1999 Honda Odyssey minivan) because already categorized product models (e.g., the Dodge Caravan) share some attributes with the new ones—attributes that position old and new products relative to each other in the market. Producers know how to interpret and respond to competing products and new product usage combinations (e.g., pickup trucks as family cars) for the same reason.

Another implication of enactment is that the mutual influence between external stimuli and conceptual systems (depicted in Figure 1) varies depending on the level of congruence between incoming information and preexisting knowledge structures. In relatively stable market conditions, in which product conceptual systems have been affirmed in their core attributes by having several similar products in the category, shared conceptual systems give structure and meaning to new stimulus arrays and tend to filter differences between the new and old products. Thus, in stable market systems, product category members are often perceived as dissimilar in only minor ways, and eliciting noticeable market responses to product differentiation becomes more challenging for late-entry producers. In the stable minivan market of 1998, for example, consumers found that the models from Chevrolet, Dodge, and Honda "all seem the same," though engineers at those companies would argue otherwise.

When new products and new uses for old products are significantly different from existing knowledge structures, however, behavioral adjustments must be made and conceptual systems are destabilized. Although behavior relative to incoming information still is informed partially by existing knowledge, the conceptual representations of existing product categories are no longer used in their entirety. Instead, the recombination of conceptual system elements into fresh representations helps people make sense of the new experiences. Instances of this recombination process are captured by research on consumer switching between category-level and piecemeal processing based on how different specific products are from their category prototypes (e.g., Sujan 1985). It is also evident in the metaphorical transfer of knowledge structures between different product domains to make sense of new product entries (Zaltman 1997), such as the use of car and truck metaphors to make sense of the product diversity early in the minivan market. Differences in responses to new entries in stable versus unstable markets also have been pointed out in other research (e.g., Dickson 1992; Utterback and Suárez 1993). Our perspective complements these by explaining the social and cognitive mechanisms involved and providing a common framework in which product market evolution and revolution can be triggered by either consumers or producers.[2]

Market Stories and Market Dynamics

A market transaction is a local phenomenon that involves a single producer and a single consumer at a particular place and time. Product markets, however, are nonlocal phenomena that extend across time, space, and market actors. For product markets to exist, the cognitive structures underlying the market must be stable across time, extended across space, and shared by many actors on both sides of the market. We suggest that such stability, extension, and sharing is achieved by means of market stories. Stories in general are critical sensemaking tools among participants in a social system (e.g., Weick 1995; White 1992). Market stories establish and explain the connections among products, benefits, and usage conditions. A minivan's product review is a type of story. It has information about the model's physical attributes, such as three rows of seats and sliding doors; usage conditions, such as family hauling and trailer towing; and performance aspects, such as versatile and practical. Annual reports in which producers' strategic plans for future minivan models are discussed are a different type of story, but they also contribute to the market's shared knowledge.

Some product market stories begin when actors in consumer or producer networks (e.g., dealers, journalists, consumers) experience new products and summarize these experiences through dialogue with other market actors. Consumers, for example, may write to a producer with positive comments about the Dodge Caravan, or car magazine journalists may write negative memoranda to their editors about the Chevrolet Astro. Other stories may begin when actors summarize aggregate market dynamics, such as when market analysts use registration and option preference information to tell stories about changes in market segments and supply-and-demand curves or when consumers coin terms such as "soccer moms" in reference to the people they typically find driving minivans.[3] Regardless of their origins, when stories go public, they often are rebroadcast to other market actors through detailed descriptions, such as product brochures, product reviews, and published market analyses, and thus are disseminated.

Broadcast stories enable large numbers of diverse market actors to share an understanding of emerging products. They give actors vicarious access to product information from experientially relevant contexts, even such typically inaccessible contexts as 0 to 60 miles per hour time trials and skid pad evaluations. At the same time, stories trigger subsequent storytelling, which stems from the sensemaking in which the actors—who take stock of the initial stories and seek to reconcile them with their own experiences—

[2]Our decision to give equal roles to consumers and producers is an important difference from these other dynamic market theories. Consumers play an important, but thus far underexplored, role in dynamic learning theories and have been given only marginal consideration in dominant design theories.

[3]We are grateful to one of the reviewers for suggesting the "soccer moms" example.

find themselves. As waves of stories diffuse throughout the producer and consumer communities, they help create and affirm collective beliefs about current category boundaries and quality orderings within these categories. Thus, stories become vehicles for building consensus around product representations.

Stories are important in stabilizing product conceptual systems, because they are the means by which social actors build the base of tacit knowledge that supports the market in question. The story-based nature of market sensemaking, however, implies that product conceptual systems are fashioned, maintained, and transformed over time through public and private discourse. This constrains the durability and stability of product conceptual systems, because individual product identities are evolving and changing continuously. Product conceptual systems are thus dynamic and reflect the tug and pull of new contingencies and participants that are trying to disrupt the existing conceptual order.

Because market stories are constantly present in active product markets, the volume and content of stories in any one market are indicators of a category's stability. This makes them useful as a measure of the enactment that is taking place around a product. Stories also can be used to anticipate what the core attributes in emerging product markets will be. Because market stories are a window into the minds of producers and consumers, they are important data in a sociocognitive analysis of markets. In the next section, we analyze the content of producer and consumer stories to test hypotheses about the market sensemaking process in the early years of the minivan product market.

Sensemaking as Revealed in Market Stories

Of critical importance in emerging product markets is the stabilization and sharing of product category boundaries. When new product entries destabilize existing categories, sensemaking is triggered among both consumers and producers. The sensemaking becomes evident quickly through increases in the volume of stories about the new product, because actors on both sides of the market are faced with the task of classifying the novel product and positioning it within existing market categories. Are minivans the same as cars or trucks, or are they something completely different? Are they family or utility vehicles? How do minivans relate to station wagons, sedans, and full-size vans? As a general rule, to the extent that any new concept cannot be assimilated easily into existing categories, new categories emerge among the communities affected by the change (Thagard 1992). This is certainly true in product markets, in which new models or products give rise to producer and consumer narratives that describe and position the product's unique core attributes. As the new categories stabilize, however, producers' and consumers' use of the stories take different paths.

In the case of consumers, stabilizing product categories become part of the tacit knowledge they use to navigate the world of products and services. By definition, tacit knowledge is outside conscious processing and does not need to be discussed unless prompted by circumstances. As categories stabilize, therefore, we expect consumers to focus increasingly on specific models and attributes of the category, while references to the category itself will serve a less important sensemaking role and fade away from the stories. Thus, in the minivan market, we should find a declining number of references to the new product category label (i.e., minivan) in consumer stories as the category stabilizes. More formally, we propose that

> H_{1a}: In emerging product markets, consumer references to a new category label will decline as the new product category stabilizes.

For producers, category mentions in stories follow a different trajectory. Similar to consumers, producers use stories to make sense of the new category. They also use them, however, to influence the stabilization process in favor of their own product models (Pinch and Bijker 1987). Producers try to bring closure to the sensemaking activities of other market actors by claiming that their products solve all relevant consumer problems and are the best representations of the category. These persuasive appeals must incorporate the new category's label to be effective (e.g., "The new Aerostar is a breakthrough in *minivan* design") because a strong conceptual link must be established between the category and the model. The need for strong links suggests that the volume of producer mentions of a new product category will rise as the product market stabilizes. Thus, we propose that

> H_{1b}: In emerging product markets, producer references to a new category label will increase as the new product category stabilizes.

Sensemaking in emerging product markets also involves giving consideration to preexisting product categories that are linked conceptually to the emerging one. If a new product concept is perceived as a substitute for existing products (e.g., minivans replacing family sedans in garages and corporate strategies), a recombination of knowledge structures and a resetting of category boundaries is likely to take place. Consumers and producers will mention the preexisting product categories in their stories as they compare, reconcile, and integrate the old and new product concepts into their conceptual frames. As the new category stabilizes and the categories recede into tacit knowledge, however, conversation about preexisting categories should decrease. Therefore, we expect that

> H_2: In emerging product markets, (a) consumer references and (b) producer references to preexisting categories that are linked conceptually to the new category will decline as the new product category stabilizes.

The sensemaking process eventually leads to the assimilation of new product categories into the product conceptual systems of both producers and consumers. When new categories become part of these generalized knowledge structures, they are used to interpret new stimulus arrays and should become evident as reference points in market stories about new products. Minivans, for example, should serve as reference points against which to make sense of new categories (e.g., tall wagons) or changing categories (e.g., sport utility vehicles). Both consumers and producers are expect-

ed to engage in these comparisons, because all market actors are involved in sensemaking. Consequently, we expect that

H_3: Both (a) consumer mentions and (b) producer mentions of a new product category as a point of reference for new and changing products will increase as the category stabilizes.

One of the important general outcomes of conceptual system development is agreement on a set of core elements that define the concept (Thagard 1992). In the case of product categories, such elements include the attributes, benefits, and usage conditions with which products must comply to be considered members in good standing (e.g., Meyers-Levy and Tybout 1989). Clear demarcations between good and poor members of a category, however, are seldom discernible until categories stabilize. In the early stages of market development, there is typically little agreement on core elements, and products with divergent attribute value arrays may have similar membership status (Garud and Rappa 1994; Pinch and Bijker 1987). As categories stabilize and their defining attributes become clearer, however, the acceptability of existing products that differ substantially in their core elements is likely to change. Product evaluations are thus dynamic, and the same product models are evaluated differently depending on a category's stability. Starting from a diverse group of models that are all "good" members of a category, over time, some category members are likely to decline in acceptability without any physical change to their attribute values, whereas others will improve their standing also without changing. Research has shown such effects in the evolution of consumer products, such as bicycles (e.g., Bijker 1995*; Pinch and Bijker 1987), and industrial products, such as cochlear implants (Garud and Rappa 1994).[4] The shifting acceptability of products as categories stabilize is part of the sensemaking process accomplished through market stories. Therefore, we expect that

H_4: In unstable product categories, products with radically different attribute value configurations will be considered equally acceptable members of the category.

H_5: As categories stabilize, shifts in the category membership parameters will exclude some previously acceptable members of the category and affirm other members.

Study

Why the Minivan Market?

An adequate test of these hypotheses requires measuring the content of market stories in an emerging market. To this end, we examined the minivan market from 1982 to 1988. We chose the minivan market because of its relevance and richness. Few people would argue against the minivan being one of the most significant developments in the motor vehicle industry's recent history, and some compare its market-transforming impact to that of the Model T (Yates 1996*). The period from 1982 to 1988 was especially turbulent in minivan development. During this period, eight minivan models by seven manufacturers were sold in the United States. All were embroiled in the competitive dynamic that two engineering paradigms vying for market dominance had created: carlike versus trucklike minivans.[5] By 1988, it became clear that the carlike paradigm would win but not before millions of the trucklike units were sold. From its 1982 inception, the U.S. minivan market grew to more than a million units in annual sales by 1986 and boasted actual model entries or planned model entries from most major global producers of motor vehicles by 1988. Thus, the 1982—1988 minivan market is both theoretically rich and commercially significant.

Text Sources

For this study, data come from stories found in consumer and industry publications. As we stated previously, the sensemaking stories of consumers and producers often are rebroadcast in commercial publications as part of the dissemination process, making such publications good synthesizers of market actors' voices.[6] We assembled in electronic format the full text of all articles between 1982 and 1988 in which the word "minivan" appeared from the following sources: *Automotive News, Ward's Auto World, Car & Driver*, and *Consumer Reports*. *Automotive News* and *Ward's Auto World* are automotive-industry publications and represent the voice of auto producers. *Car & Driver* is a widely read automobile-enthusiast publication that covers most roadworthy product categories sold in the United States, and *Consumer Reports* is a monthly product-ratings magazine that gives substantial coverage to motor vehicles. Together, *Car & Driver* and *Consumer Reports* represent the voice of auto consumers. Content from other industry (e.g., *Chilton's Automotive Industries*) and consumer (e.g., *Motor Trend*) publications was compared with our chosen sources to assess whether consumer and producer voices were being captured adequately.[7] No significant differences were found in the consumer and producer stories between the publications coded and those not coded, giving us confidence that our chosen sources adequately captured consumer and producer voices for purposes of our study. A combined total of 116 articles containing 5889 lines of text were coded.

Coding the Text Data

To test the hypotheses, the data were coded for general references to the minivan, car, station wagon, and van categories; for the use of these categories as points of reference;

[4]Cochlear implants are surgically applied hearing aids that simulate auditory perception by sending electrical charges directly to the cochlea, a part of the inner ear.

[5]The models marketed in the United States between 1982 and 1988 were the Toyota Van, the Dodge Caravan/Plymouth Voyager, the Chevrolet Astro/GMC Safari, the Ford Aerostar, the Mitsubishi Wagon, the Nissan Van, the Volkswagen Vanagon, and the Colt Vista, which was built by Mitsubishi and marketed by Chrysler.

[6]The rationale for considering these publications accurate synthesizers of market actor voices is straightforward. Consumers and producers endorse these publications through subscriptions and advertisements because the publications reflect their own interests and beliefs. We chose reputable and long-standing publications that have proven themselves consistently accurate in capturing and reflecting their audiences' voices.

[7]The comparison test consisted of choosing same-topic articles (e.g., Dodge Caravan, Chevrolet Astro) in the same time periods as these other sources and comparing their content and tone with those of the articles being coded.

and for comments on the acceptability of existing minivan models on different attributes. Coding was performed at the sentence level by two independent judges who followed specified coding rules.[8] One judge coded the consumer voice articles, and the other coded the producer voice articles. Both judges coded 10% of the text data (12 articles, 610 lines of text) for code scheme validation purposes. Cohen's kappa measures of coding reliability per article ranged from .60 to .72, all significant (Bishop, Fienberg, and Holland 1975, p. 395). Data were aggregated by month. The number of minivan models in the market was used as a surrogate for category stability, though it was derived differently for producers and consumers. Only the number of models actually in the market was used as an indicator of stability for consumers, because consumers are primarily aware of products currently for sale. The number of models in the market and under development was used as an indicator of stability for producers, because producers consider both active and under-development products in their sensemaking. Because no producer had more than two models in the market concurrently during this period, it seemed reasonable to assume that an increase in the number of models was caused by new manufacturers entering what was perceived as a stabilizing market.

Acceptability scores for the eight minivan models were calculated from the incidence of clearly positive or negative comments about specific models and their attributes (e.g., "The Toyota Van has a good reliability record," "Front passenger foot space in the Chevrolet Astro is deficient"). The number of positive and negative comments for each model was aggregated by month. The number of negative comments was subtracted from the positive comments and divided by the total number of comments. This resulted in the net proportion of positive or negative comments, which was multiplied by 100 to arrive at final evaluation scores.

Data Analysis

H_{1-3} were tested by regressing the number of general and reference point mentions for each product category (i.e., minivan, car) against the number of minivan models in the market (i.e., stability). Monthly unit sales volumes by category and the total number of lines of text coded by month were used as control variables. The data were modeled using categorical time series regression with a Poisson maximum likelihood estimator (Lawless 1987) because of the discontinuous and discrete nature of the dependent variable.[9] H_4 and H_5 were tested by comparing the acceptability scores for the minivan models that were in the market between 1983 and 1988.[10]

Results

References to the minivan category: H_1. Results for the regression analyses are summarized in Table 1. H_{1a} and H_{1b} are supported. These hypotheses predict that the frequency of mentions of the minivan category would decline for consumers and increase for producers as the minivan category stabilized. The negative coefficient for number of models for consumers (–.29, $p < .01$) suggests that references to the minivan label by consumers became less frequent as the number of models in the category increased. Consumers were buying more minivans and a wider variety of them, but they made reference to the minivan category label less often as it became a tacit element in their conceptual frames. Producers increased their references to the category as the number of models increased (.06, $p < .01$). For producers, the number of minivan category references increased even in periods when sales did not, as implied by the modest negative relationship between the number of mentions and sales (–.000018, $p < .01$).

References to other affected categories: H_2. H_{2a-b} for the most part are supported by the results (see Table 1). Analyses were performed for the car, full-size van, and station wagon categories, which were the categories most often mentioned as vulnerable to the minivan early in the market development process. Because assertions of vulnerability are part of the stories that shape conceptual system development in a socially constructed world, their predictive accuracy was investigated.[11] With the exception of producers' references to the car category, all other results were as expected and most were significant. The volume of general references to all three categories (car, van, and station wagon) by consumers declined as the minivan category stabilized (car: –.15, $p < .01$; van: –.08, $p < .01$; station wagon: –.16, $p < .01$). For producers, the references to the van and station wagon categories also declined (van: –.06, $p < .09$; station wagon: –.11, $p < .01$).

An unexpected increase in the number of mentions of the car category by producers was found. This rise in category mentions is compatible with our theory, however, if we consider that a larger than expected loss of family car market share would generate higher levels of producer sensemaking than would be required for the other categories. A review of the text suggests that the increase in mentions revolved around producer surprise over the high attrition rate of family sedan owners to minivans. Early in the minivan market's evolution, it was expected that station wagons and full-size vans would suffer the most from the minivan entry, and the market was not expected to surpass the one million vehicle mark until after 1990. The market's faster-than-expected growth and substantial inroads into the family sedan market were subjects of much producer concern and many mentions in the car category. Con-

[8]Copies of the coding rules are available from the authors.

[9]The data are discontinuous and discrete because stories were not published every month for every model between 1982 and 1988, leaving months with zero mentions in the data.

[10]The year 1982 was excluded because only the Volkswagen Vanagon was evaluated that year, and its high acceptability in 1982 carried over into 1983.

[11]The relationship between minivans and pickup trucks also was investigated, though trucks generally were not believed to be vulnerable to minivans. Minivans were not found to have a significant influence on the truck category. Details on the regression results for all categories (minivan, car, van, station wagon, and truck) are available from the authors.

TABLE 1
Results of Poisson Maximum Likelihood Regression Analyses

Consumer Voice

Category Name	Log-Likelihood	Chi Square	Minivan Stability	Category Sales	Lines of Text	Hypotheses
Minivan	141.86	31.21**	–.29**	.21E–4	.38E–2**	H_{1a} supported
Car	256.11	401.85**	–.15**	–.17E–5	.64E–2**	H_{2a} supported
Van	316.15	667.24**	–.78E–1**	.10	.66E–2**	H_{2a} supported
Station Wagon	98.66	114.31**	–.16**	.32E–4*	.64E–2**	H_{2a} supported
Minivan used as a reference point	40.28	27.84**	.20	.12E–4	.62E–2**	H_{3a} not supported

Producer Voice

Category Name	Log-Likelihood	Chi Square	Minivan Stability	Category Sales	Lines of Text	Hypotheses
Minivan	321.84	601.09**	.60E–1**	–.182E–4**	.58E–2**	H_{1b} supported
Car	442.88	1007.38**	.25E–1**	–.12E–5**	.70E–2**	H_{2b} not supported
Van	312.19	337.90**	–.59E–1	.18E–4	.23E–1**	H_{2b} supported
Station Wagon	139.28	92.69**	–.11**	.31E–4**	.11E–1**	H_{2b} supported
Minivan used as a reference point	124.94	80.11**	.24	–.77E–4	.18E–1**	H_{3b} not supported

*Significant at .05 level.
**Significant at .01 level.

sumers, however, did not have as much trouble making sense of the minivan's success.

Use of the minivan category as a reference point: H_3. H_{3a-b} were not supported for either producers or consumers. Although the frequency with which the minivan category was used as a point of reference rose over the period, it was primarily as a result of the increased level of general conversation (number of lines coded) about the category. Neither sales level nor category stabilization influenced the use of the minivan category as a point of reference.

One plausible explanation for these results is that there were no major destabilizing events from 1982 to 1988 that would require high levels of sensemaking around the minivan. When the conceptual systems stabilized, there was little reason to use minivans as points of reference until another major market event threatened that stability, and no such event had taken place by 1988. It is possible that studying minivan category use as a point of reference during the sport utility vehicle craze of the early 1990s would show the minivan's established role in the market, but such a study must be placed on future research agendas.

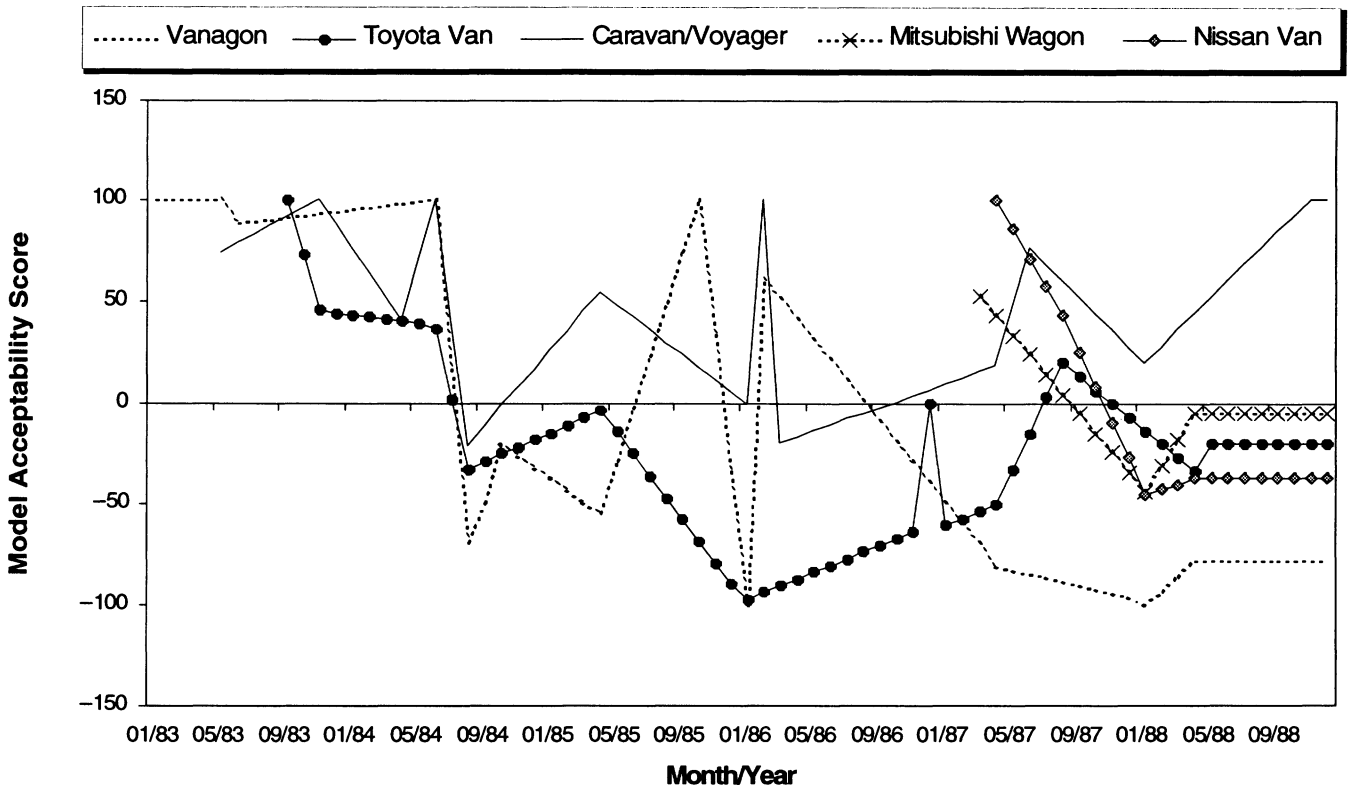
Shifts in the acceptability scores of category members: H_4 and H_5. Limited qualitative support for H_4 and H_5 comes from analyzing trends in the data. H_4 predicted that, early in the life of emerging categories, there would be considerable variation in the attributes of products that were perceived as "good" members of the category. H_5 suggested that, as the category's conceptual frame stabilized, a shift would occur in the acceptability of category members, with some improving and others declining while remaining physically unchanged. The predicted dispersion in the acceptability scores of all eight models was easily discernible. For illustrative purposes, consider the acceptability scores for the Dodge Caravan/Plymouth Voyager, the Volkswagen Vanagon, and the Toyota Van, as shown in Figure 2.[12]

The data show that throughout 1983 and early in 1984, all three of these models were considered excellent minivans, even though they were different in their physical configurations and attribute values (e.g., engine placement, ride, handling, appointments).[13] The market stories reveal that, early in the period, inherently incompatible attributes on different models often received equally high desirability scores (e.g., front- and rear-wheel drive both were consid-

[12]Acceptability scores for all eight models are available from the authors. They were not included in the text for space considerations.

[13]The Volkswagen was long and narrow with a rear-mounted, air-cooled engine; rear-wheel drive; and room for nine passengers and luggage. The Toyota was a narrow vehicle with a short wheelbase that was engineered for Japanese highways as a cargo hauler and retrofitted for passenger use. It had cab-over engine placement, rear-wheel drive, and room for seven passengers without luggage. The Dodge/Plymouth models were front-wheel drive vehicles based on passenger car engineering specifications, with room for seven passengers without luggage.

FIGURE 2
Model Acceptability Scores: January 1983–December 1988



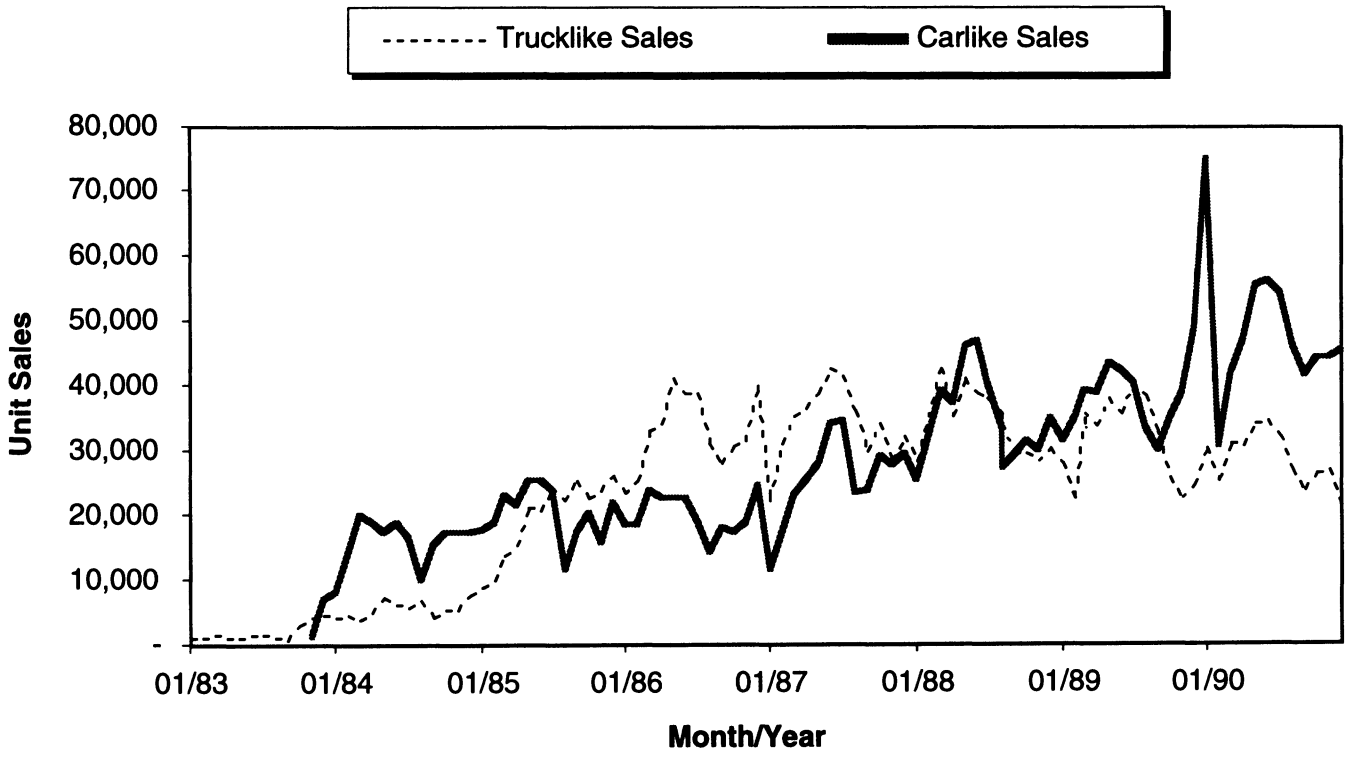
ered excellent for minivans). Starting in mid-1984, a trend developed in the data series that became quite pronounced by 1988: The acceptability scores for the three models started to diverge. As can be seen in Figure 2, scores for the Caravan/Voyager models remained mostly positive and improved during the time period. The acceptability of the Volkswagen and Toyota models, however, became increasingly negative. The acceptability score trends revealed in the data, therefore, are consistent with H_4 and H_5. The stories reveal that, as the minivan category stabilized between 1983 and 1988, a category prototype resembling the Dodge/Plymouth models became established in market actors' minds—a prototype that became the benchmark for all members of the category and against which noncompliant category members became less desirable (Meyers-Levy and Tybout 1989). Market actors' need for cognitive coherence caused the Volkswagen and Toyota models to lose their previously positive membership status. Similar shifts in product acceptability with the emergence of a category prototype have been shown by dominant design research (Utterback and Suárez 1993). Our acceptability data, however, come from market stories that predate the actual sales declines that are documented by dominant design studies and, in that sense, serve a more predictive function.

Further evidence for category prototype stabilization around the Caravan/Voyager comes from the fate of new minivan models from Mitsubishi and Nissan in 1987. These models were introduced with great fanfare and high expectations and promptly started generating negative acceptability scores (see the trend lines starting in 1987 in Figure 2). Explaining their quick demise is simple; both models were similar to the Toyota Van, retrofitted cargo vehicles designed for the Japanese home market that did not comply with the established category prototype in 1987.

As additional qualitative support, consider the references in producer stories in 1985 to upcoming models from General Motors, Ford, Toyota, and American Motors, all of which were front-wheel drive vehicles based on passenger car engineering. The producers claimed that their new designs were based on consumer demands, but our analysis shows that consumer signals in terms of model evaluations until 1985 were ambiguous. Consumers still were comparing notes on the virtues of different minivan designs (carlike versus trucklike) when producers made these announcements. Also ambiguous were consumer actions, as is evident in the aggregated sales volumes of carlike minivans (Caravan/Voyager models) and trucklike minivans (Volkswagen Vanagon, Toyota Van, Chevrolet Astro/GMC Safari, Ford Aerostar) illustrated in Figure 3. In 1984–1985, when producers initiated their stories about future carlike models, sales of trucklike units had risen higher than sales of carlike minivans, and they remained higher than carlike minivan sales until after 1988.

Given that market signals (e.g., sales trends, consumer stories) were mixed in 1984–1985, it appears that producers were enacting their competitive environment, not responding to it. Into a cognitively volatile market interface, producers introduced stories that signaled that the minivan category prototype was a carlike, front-wheel–drive vehicle.

FIGURE 3
Trucklike and Carlike Minivan Sales: January 1983–December 1990



These stories circulated and entered the conceptual systems of consumers and other producers who still were developing their representations of what a minivan should be. The stories, in effect, empowered consumers who owned Dodge/Plymouth minivans, as well as the Chrysler Corporation, to speak with more confidence about their models in their subsequent stories and triggered the positive feedback effects that favored the Chrysler design. The General Motors, Ford, and Toyota stories influenced the behaviors and stories of other market actors, and they became self-fulfilling prophecies. It is possible that the new product announcements by General Motors, Ford, and other producers gave a directional "push" to the social construction process and handed Chrysler Corporation the minivan market dominance it has exercised since. Had these producers enacted stories in which the Chevrolet Astro, the Toyota Van, or similar designs were the preferred ones, the nascent consumer feedback effects (Dickson, Farris, and Verbeke 1999) that stemmed from Chrysler's early entry and on-the-road familiarity might have been neutralized, and the minivan category prototype might have stabilized around a different core element array.

Discussion and Implications for Further Research

Our analysis of the minivan market from 1982 to 1988 supports the notion that emerging product markets are socially constructed. Through their stories and behaviors, actors on both sides of the market contributed to the stabilization and assimilation of the minivan conceptual system, and they set boundaries for the minivan market that are now taken for granted. Within broad and diffuse preferences, the minivan category came across as a dynamic conceptual system. Neither consumers nor producers had total control over the category's final realization, and both sides of the market were instrumental in shaping the category's evolutionary trajectory.

Part of the value of this study is its argument that some of the fundamental dynamism of product markets stems from the equally fundamental dynamism of producer and consumer conceptual systems. The marketing field already has established that social processes (Frenzen and Davis 1990; McCracken 1986), cognitive processes (Carpenter and Nakamoto 1989; Porac et al. 1995), and economic/behavioral dynamics (e.g., Dickson 1992; Dickson, Farris, and Verbeke 1999) are important shapers of product markets, but few researchers have combined cognitive and evolutionary processes into a coherent framework. We suggest that our most important contributions are to help the field better understand where the market-organizing, shared knowledge structures that we call product categories come from and to do so in a way that integrates the information-processing and dynamic systems views of product markets that already are established in the literature. Our sociocognitive model provides insight into the black boxes of consumer and producer thinking, from which emanate some of the positive and negative feedback effects that shape product markets

(Arthur 1990; Dickson, Farris, and Verbeke 1999) and that surely must precede the entry and exit decisions of firms (Suárez and Utterback 1995; Utterback and Suárez 1993).

Another contribution of this study is the deployment of another set of tools with which to explore the ambiguities and complexities of the market interface. Investigating the content and structure of the mental models that producers and consumers bring to the market long has been the realm of invasive data-gathering methods. Such methods actively request that subjects externalize bits and pieces of the stories they use to make sense of their environment, be it in field interviews (e.g., McCracken 1986), with questionnaires and experiments (e.g., Frenzen and Davis 1990; Ratneshwar and Shocker 1991), through retrospective self-analyses in controlled settings (e.g., Carpenter and Nakamoto 1989), or in the elicitation of stories and images through metaphorical reasoning (Zaltman 1997). This active elicitation of conceptual systems provides valuable data, but all invasive methods suffer to varying degrees from their contrived nature. Subjects who are asked to verbalize and explain their mental models must rely on memory and their ability to recognize incongruencies in their behavior, processes that are fraught with error. In addition, the assumption often is made that the aggregation of individual-level mental models is enough to gain access to community- or societal-level knowledge structures, an assumption that most researchers admit is seldom valid (e.g., Porac and Rosa 1996). Thus, data collected with invasive methods are rich in detail but possibly biased and should be supplemented with data from less-contrived sources. Careful and systematic analysis of the public discourse that surrounds emerging and established product categories yields measures that can be almost as detailed and precise as those collected through other methods and captures the aggregate conceptual systems that are defining and influencing the market as a whole.

One additional contribution of our work is to show in more detail the process by which mental representations grow in complexity and rigidity as they mature. As the knowledge structures of consumers and producers mature, they become harder to change, and their resistance to change in turn forces alterations in how market actors make decisions. Sujan (1985), for example, has documented significant differences in decision strategies between novice and expert consumers that are analogous to the differences between open- and closed-minded producer decisions noted by Day (1994a). We suggest that both these, as well as similar results in other research, are cases of knowledge-structure maturation (expert consumers and closed-minded producers both have more mature knowledge structures) and its influence on decisions.

In dynamic markets, it is not advantageous for consumers or producers to hold mature and rigid knowledge structures, because they hinder their ability to receive and process novel stimuli. In effect, widely shared mature knowledge structures set up powerful positive feedback network effects (Arthur and Lane 1994*; Dickson, Farris, and Verbeke 1999) that cause consumers and producers to remain committed to product concepts that are no longer advantageous. It has been less clear, however, how to move away from mature and rigid knowledge structures, short of being submitted to harsh environmental shocks. Our sociocognitive framework suggests that knowledge structures are informed by both behavior and sensemaking, which implies that disruptions to either may help reduce rigidity in the conceptual system. In practice, this suggests that market actors can benefit from destabilizing behaviors and thinking. Unusual purchases or consumption activities about which stories are told are such destabilizing forces, as are experimental and limited edition products that are exposed to market sensemaking (e.g., product concepts unveiled at trade shows). Whereas rigidity-reducing behaviors and sensemaking have been widely advocated for companies (e.g., Day 1994a, b), no such prescriptions have been made for consumers. Such prescriptions would entail encouraging consumers to use products in unusual ways and seek the limits of products' applicability to different usage conditions.

In an age in which we try to curtail adventurous product use by consumers because of product liability concerns, such prescriptions seem ludicrous. They may be, however, what are necessary for vibrant markets in the long run. Instead of constraining consumers and limiting their ability to be active market shapers, it may be wise to develop means by which to encourage adventurous practices among consumers while sustaining some base level of social welfare and safety. Such a task may be difficult, but it is not impossible. One factor to make it possible, for example, may be adopting modular product architectures (Sanchez 1999), with the added constraint of making modular exchanges of functionality highly accessible to consumers. If careful design, for example, made it possible for cellular telephone users to experiment with them as remote controls, it is possible that highly innovative uses would be generated continually (e.g., remote control of home appliances, purchasing highway tolls on the go, pay-per-view programming by telephone) and that the cellular telephone market would become more dynamic and vibrant as a result. Other ways of encouraging responsible and innovative consumer use of products are possible and merit additional investigation.

Our finding that consumers and producers respond to growing stability in the product category differently also has some interesting implications. The silence of consumers as they embrace a product category might be a macro-level equivalent of a shift in consumer thinking from the *assembling* of mental representations, which is analogous to piecemeal processing, to the *application* of tacit mental representation, which is analogous to schema-based processing (Fiske 1982*). This implies that piecemeal versus schema-based processing may involve not only individual-level trade-offs, but also social ones. That is, the producer and consumer communities use piecemeal and schema-based processing equivalents in their aggregate sensemaking, and they activate different base mechanisms depending on the coherence and stability of their shared conceptual systems. It also suggests that markets in which conversation about product concepts is encouraged may become more cognitively malleable due to the dialogue. Thus, another possible way of encouraging change in widely shared representations of product categories is to encourage public discourse about them. The possibility that markets could be proactively en-

gaged and directed in their aggregate cognition management by encouraging public discourse merits further research.

As it pertains to marketing practice, a vocal consumer community signals that it is still developing its product conceptual system and, consequently, still may be subject to the influence of adventurous diversity in product architecture and performance. In contrast, a silent consumer community is one with relatively well-developed ideas regarding what different product categories represent and may be less susceptible to change. Silent consumers may be more efficient processors of incremental product improvements and better at sifting out models that do not approximate the category prototype. They may also be more likely to ignore producer differentiation attempts because of the biasing influence that stable mental models exert on their processing of novel stimuli. Marketers, therefore, might benefit from considering the overall volume of consumer conversations (i.e., the numbers of stories) about product categories and not just the content of the conversation; that is, they may benefit from listening to customer silence as well as voice.

It would be interesting, for example, to go beyond Golder and Tellis's (1993) archival work and measure the volume of sensemaking that was present at the time that innovations such as personal computers and camcorders were introduced by their technological pioneers versus that of their more typically recognized market pioneers. If our framework is representative of market-shaping factors, we should find that market sensemaking about the product category was more active at the time the market pioneers introduced their products than when the technological pioneers made their moves. Because high levels of conversation would have made market actor cognitions more malleable, the market pioneer's claims would have had a bigger impact on the product conceptual systems than the earlier claims of the technological pioneer and explain at least part of the market pioneers' success.

Producer conversation volumes increasing concurrently with product category stability also has research and managerial implications. As we discussed previously, increased producer conversations about evolving categories have two components: (1) making sense of the emerging categories and (2) trying to bring closure to the sensemaking in ways that are advantageous to their own position. However, people and organizations that are busy telling stories are probably not listening well, which suggests that, as producers raise the volume and intensity of their conversation about product categories, they disrupt their ability to assimilate market signals and, in effect, hinder their understanding of the market. Producer deficiencies in fully understanding their markets therefore may be "bounded" by their own conversations, which disrupt their environment-scanning and learning abilities. It is also possible that producer conversations bias their perceptions of the market by imposing self-serving interpretations on ambiguous market data, an often-cited deficiency of marketing organizations (e.g., Day 1994a). It may be possible, therefore, that producers that are making the most claims are those most likely to miss market signals and that striking a balance between the broadcasting of market-shaping stories and listening to the stories of others should be added to the prescriptions for being market-driven. The role of producer voice in market formation merits further research, and companies may want to consider the wisdom of measuring the impact of their words more carefully.

This study is the first in a stream of research aimed at understanding the sociocognitive nature of markets in detail and, as such, has noticeable weaknesses. First, it uses only one product category to support its claims. The minivan category has had a dramatic influence on the automotive industry and is unique in many ways. It is important, therefore, that additional research focus its attention on less dramatic product categories if the generalizability of this framework is to be supported. Are product concepts such as dishwasher detergent and paper clips also socially constructed? Such a question must be answered in the affirmative before we can claim to have developed a theory of product markets that is truly complementary to those already in the field.

Second, the study uses the voices of commercial journalists as surrogates for the general voices of consumers and producers. Although we believe that journalists are responsive to their constituencies and seek to reflect their constituents' concerns and opinions, they are nevertheless different from consumers and producers in several ways. One is that journalists, as professional market mavens, have better developed and more extensive knowledge of the product categories than the average person. In addition, because many journalists move in the same social circles, share common educational and experiential backgrounds, and are held to the same standards of performance, their knowledge structures are likely to display less variance than what we would find if we were to examine the knowledge structures of average consumers and producers. We believe that consumer and producer representations are compatible with those of the professional journalists, because it is the journalists' job to make them so, but they may not be as rich in detail. It is possible, therefore, that at the individual level, we would find a wider range in conceptual backdrops for the behaviors and sensemaking activities of average consumers and producers than we did among our chosen sources. At a more aggregate level, however, these individual-level differences could be cancelled out, because there are consumers and producers that are more expert than the journalists and that would offset the less-rich representations of others. Because the journalists' job is to reflect widely shared sensemaking stories, we do not believe that using the voices of professionals is improper for our initial explorations. Further research will need to address the individual differences among average consumers and producers more directly.

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