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Competitive Groups as Cognitive Communities: The Case of Scottish Knitwear Manufacturers Revisited

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Abstract

In this paper we reflect on the contribution of our 1989 article "Competitive Groups as Cognitive Communities: The Case of Scottish Knitwear Manufacturers." We begin by recalling our backgrounds and motivations as collaborators on the project, and then discuss recent developments in the Scottish Borders knitwear industry. Noting that the industry has suffered continual decline in the twenty years since we published our paper, we suggest that the case still raises issues that remain open questions in the field despite the significant efforts by management researchers in recent years to understand the sources of industrial decline and revitalization. We outline what we feel are gaps in the existing literature and then end with the suggestion that these gaps are likely to be addressed only through multidisciplinary research that integrates resource, power, and cognitive theories of industrial dynamics.

Introduction

It is an honor to be asked by the Journal of Management Studies*'* editorial team to contribute a retrospective commentary on our 1989 "Competitive Groups as Cognitive Communities" (Porac et al., 1989) article. It is also a privilege to have Professor Sarah Kaplan reflect on the paper's contribution to the study of managerial cognition. Her review of recent developments in the strategy and organizational cognition literature reminds us of just how far the study of cognition and organizations has come in the last twenty years. For us, the cognitive communities paper was truly a labor of love. It was the first outcropping of a research collaboration that continued for over ten years. The paper allowed us to collect our thoughts about where we wanted to go in our collaboration, and to cement professional relationships that are still very rewarding and meaningful.

When we wrote the 1989 paper we did not expect (but hoped!) that it would become particularly well regarded. We saw it as a risky exploratory attempt to set out an agenda for re-conceptualizing the study of intra-industry stratification, or "strategic groups." In our view at the time, the strategic groups literature rightly asked whether firms could be categorized at an intermediate level below the industry, but had become bogged down by an overemphasis on the economic characteristics of group membership and a concomitant downplaying of the psychological and sociological dimensions of groups. The Journal of Management Studies has always been wonderfully open to alternative perspectives that challenge mainstream thinking in our field. This was certainly the case in the early years of the "cognitive turn" in strategy and organizations

research. The Journal was a safe harbor for scholars like us who were pushing deeper into the cognitive micro-foundations of strategy and markets. We took advantage of this safe harbor in writing the cognitive communities piece. We entered Scotland in an exploratory mode, with an open mind about what we might find but hardly convinced that any sort of research report would be a result of our inquiry there. However, what we observed in the Scottish knitwear industry was so interesting theoretically that we felt compelled to write a paper about it. It has been quite gratifying to realize that other scholars have found the 1989 paper useful in their own work, reinforcing for us our strong belief that a compelling story incorporating new ways of thinking and grounded in a rich empirical context can often trump more precise and quantitative data in its impact on the field.

Through its "Classics" series, the Journal of Management Studies is again affording us a safe scholarly harbor, this time to revisit the arguments and insights that we first wrote about in 1989. Just as we did with the original competitive groups paper, we'd like to take advantage of this harbor to discuss the cognitive microstructure of strategy, competition, and markets. This time around, though, we have the advantage of being twenty years wiser. Much has changed in our field during the past two decades. As Professor Kaplan notes, research on the cognitive bases of strategy and organizations has certainly matured and expanded during this period. Indeed, if one defines "cognition" broadly to encompass cognate areas such as organizational learning and knowledge-based views of organizations, it is fair to say that research into the cognitive bases of organizations and markets has become an important mainstream topic in management studies.

And yet, despite the varied developments that have spurred recent inquiry into the cognitive bases of firms and markets, we believe the conceptual themes that we emphasized in our 1989 piece are still quite relevant to current conversations in the field, and that some of the theoretical gaps that we identified back then still exist in the relevant literatures. For example, there is still much to understand about how market interfaces are socially constructed via producer/buyer sensemaking (e.g., White, 2002; Kennedy, 2008), and the fundamental categorization processes that form the core of markets and industries are still very much an active area of research (e.g., Rao, Monin, & Durand, 2005; Hannan, Polos & Carroll, 2007). Moreover, the inherent tension between competitive isomorphism and differentiation that we described as the "competitive cusp" still seems to be a basic conundrum in organizational identity formation and change -- i.e., how to be similar to rivals in key respects, but different as well (e.g., Deephouse, 1999; McNamara, et al., 2003). In this paper we'd like to revisit some of these themes in light of the current literature. A good place to start is with the intellectual motivations that initially triggered our interest in collaborating on the Scottish project.

Intellectual Confluence

The three of us entered into the project from very different intellectual backgrounds, but with interests that, in retrospect, meshed well for the research goals at hand. Howard Thomas was trained as a statistical decision theorist and published on the theory of risk before turning his attention to business strategy and strategic positioning. His interest in the Scottish knitwear project evolved out of collaborative work with John McGee at London Business School on strategic groups (e.g., McGee & Thomas, 1986) and with Avi Fiegenbaum, Bill Bogner, Joe Porac and others at the University of Illinois.

Michael Hunt introduced the concept of "strategic group" in 1972 to denote intra-industry differences in the strategic positioning of firms (Hunt, 1972). Hunt's observation that firms in the 1960's white goods industry varied in their vertical integration, product differentiation, and product diversification suggested the possibility that industries were not collections of homogenous firms but, instead, were characterized by considerable inter-firm strategic and performance heterogeneity. Moreover, Hunt's work intimated that strategic and performance heterogeneity were contingently related. The concept of strategic groups thus helped to explain profitability differences among firms, and so contributed to a very lively debate among strategy scholars during the 1970's and 1980's about a possible middle ground, and point of intersection, between industry-level structures and firm-level strategies.

In their evaluation of the relevant literatures, McGee and Thomas (1986) championed the concept of strategic groups as a promising development in strategic theory. At the same time, however, they noted the substantial conceptual and methodological difficulties that come with defining and measuring groups in actual industry contexts (see also Fiegenbaum & Thomas, 1990; Bogner, Thomas & McGee, 1996). A key set of issues raised by McGee and Thomas concerned the relationship between strategic groups and patterns of rivalry in an industry. Many proponents of strategic group analysis argued that groups were more than simply analytical abstractions and represented behavioral configurations influencing competition and strategy formulation (e.g., Porter, 1979). McGee and Thomas recognized the potential of group analysis to contribute to understanding inter-firm rivalry, but concluded that this prospect "merely tantalizes" (p. 157) because most studies on strategic groups at the time did not

measure competition and rivalry "except as intervening variables 'solved out' in the form relationship between group structures and performance" (pp. 148-49). McGee and Thomas suggested that adequate progress mapping the relationship between industry group structures and rivalry could only be made by further in-depth studies of particular industries such as brewing (Johnson & Thomas, 1987), insurance (Fiegenbaum & Thomas, 1990), retailing (Lewis & Thomas, 1990), and pharmaceuticals (Bogner, Thomas & McGee, 1996). Of course, this was precisely the goal of our work in Hawick, Scotland as well.

Joseph Porac's intellectual roots are in social psychology and anthropology and he entered into the project as a way of exploring the potential of Weick's (1979) sensemaking perspective for understanding the dynamics of organizational communities. At the time, most sensemaking research was focused on small groups and organizations. Very little work had been done to extend the study of sensemaking to interorganizational contexts. In this regard, Porac was struck by the many accounts that were advanced in the 1980's to explain the decline of traditional U.S. manufacturing industries facing increasingly capable foreign competitors. This decline spurred a wave of academic and journalistic attention to "deindustrialization" (e.g., Bluestone & Harrison, 1982) and the failure of various U.S. industries such as steel (e.g., Hoerr, 1988; Reutter, 1988) and automobiles (e.g., Yates, 1984) to adapt to changing competitive exigencies. The decline of "rust belt" industries in the United States was no doubt influenced by multiple factors, but a common theme in the many vivid accounts of specific industries was the fact that both management and labor in these industries tended to be very inward looking and remarkably dismissive of the threats posed by off-shore competitors. This competitive

"myopia," as Levitt (1975) once called it, focused firms in these industries on competing among themselves using traditional rules of the game rather than on attending to foreign rivals who were playing by different rules (e.g., small fuel efficient car production, basic oxygen steel furnaces) and who were finding success in U.S. markets. Such strong "in-group" vs. "out-group" biases are, of course, characteristic of general sensemaking processes and begged the question of what cultural, interorganizational, and socio-cognitive factors produced them.

Charles Baden-Fuller came to the project with a background in economics. Like Porac, he too was interested in "mature" industries that had begun to feel the bite of foreign competition. He had already contributed to the policy debate on excess capacity in European industries and noted that traditional economic models could not explain firm behavior in declining industries such as steel castings. He published a formal model of "irrational firm behavior" in a 1989 paper appearing in the *Economic Journal* (Baden-Fuller, 1989), as well as a number of other papers on declining industries in the late 1980's and early 1990's (e.g., Baden-Fuller, 1986; 1990). In following up these ideas, he decided to study not just failing firms and industries, but also firms and industries that seemed to be having a measure of success in defending their traditional businesses. With John Stopford, Baden-Fuller applied for and received funding from the UK's Economic and Social Research Council to study competitively successful UK firms, and Scottish knitwear producers made it onto the list of research possibilities given their historically strong performance in a tough international environment.

Anticipating subsequent work, Baden-Fuller had already begun to view maturity as a state of mind rooted in managerial beliefs as much as an immutable economic condition

existing in the marketplace. He pursued these ideas further in his 1992 book with Stopford, *Rejuvenating the Mature Business: The Competitive Challenge*. Baden-Fuller and Stopford argued that firms "mature" and subsequently decline because managers come to believe they are trapped in a mature business, lose their imagination, and thus stop innovating and creating new sources of value. If left unchecked, the circularity of this reasoning becomes a vicious downward spiral of failure and eventual dissolution.

The research challenge was to map these beliefs, as well as those involved in the upward cognitive spiral of continual innovation, in a way that was empirically viable and that led to interesting theoretical insights. When Porac and Thomas mentioned their interest in cognitive categories and strategic groups, Baden-Fuller saw the connection to his own work and generously suggested an entrée into the knitwear sector. All three of us then set off for Scotland to explore the industrial belief system of the Hawick producers. Thomas was searching for the cognitive basis of strategic groups, Porac for the cognitive causes of competitive myopia, and Baden-Fuller for the cognitive triggers of industrial rejuvenation.

Hawick Redux

These intellectual motivations intersected just enough for a fruitful collaboration exploring the dynamics of competition among the Hawick knitwear producers located in a relatively prosperous (at the time) region of Scotland along its southern border. First, we discovered that the Scottish knitwear industry was markedly stratified into different groups of firms, each characterized by their own competitive definitions and strategic recipes. Although it took several more years to map these groups comprehensively across the whole of Scotland (e.g., Porac et al., 1995), the Hawick paper generated some

of the first empirical data supporting the conjecture of McGee and Thomas (1986), Porter (1979), and others that strategic groups were not just statistical abstractions, but, instead, represent significant "cuts" in the competitive and cognitive microstructure of industries. Knitwear producers in the Borders region of Scotland very clearly viewed themselves as a competitive "set," or category, distinct from the rest of the industry, and they competed (and cooperated) with each other accordingly.

Second, we discovered that these strong identity beliefs were accompanied by a sharp inward strategic focus on other group members. In fact, this strong in-group bias was one of the most obvious empirical regularities that we observed in discussing with managers the comparative capabilities of the Hawick producers vis-à-vis lower cost foreign rivals. Time and again we were told that foreign rivals "are not our competitors" because "they can't do what we can do" and that "we serve our customers much better" and have "special skills" such that "we really only compete among ourselves." Moreover, as we noted in our original paper, these beliefs seemed to be reinforced along the value chain because Hawick producers had a biased sample of market cues. They tended to focus and interact with only their existing suppliers and customers, and obviously were being selective in what they heard. The Hawick producer identity was truly "enacted," to use Weick's (1979) terms, and the underlying enactment process had produced a very specific definition of the business and competitive space.

The question, of course, was whether this focused strategy and definition of the market was a source of competitive advantage or disadvantage. Strategy and organizational theories could no doubt support either conclusion, and our own observations in Hawick provided good grist for considering both possibilities. The

Hawick producers were financially successful during the 1980's, and, indeed, we had chosen to study them because of their success. However, a third outcome from our research was the nascent empirical intuition that most of these firms were on borrowed time, and that some had already entered the downward spiral of self-reinforcing decline that Baden-Fuller and Stopford (1992) argued is a central dynamic of a "mature" business. We worked hard in writing the 1989 paper to be as neutral as possible in telling the Hawick story, and thus did not take a stand on the liabilities or advantages of the sector's strong business identity. But, it was pretty clear to us back then that the "Hawick Mind," as we called it, had become more of a liability than a source of spirited innovation in the industry.

The cues were all around us. Hawick Managing Directors spoke proudly about their firms' skill in providing retail customers with flexible small lot production runs. But, when we spoke with these very same customers, they said just the opposite, and remarked that they often had to bargain hard to get their preferred garments delivered on time. And, the production flexibility that managers said existed in the industry was betrayed by the large work-in-process inventories that we observed in many Hawick factories. Similarly, Hawick managers seemed convinced that they were pushing the outer envelope of technological innovation in worldwide knitwear production, but four centuries had passed since the English clergyman William Lee invented the first automatic knitting machine in Nottingham, and the UK-driven industrial revolution had long since come and gone. Responsibility for the development of modern knitting technologies had largely been transferred and outsourced to Japan and Germany, and it did not seem to us that Scottish firms were investing nearly enough on indigenous

process innovations, nor even on new technologies that could be easily imported from these other countries. Indeed, when we queried managers new to the industry, those who were less indoctrinated into the Hawick Mind, we often sensed their frustration with the current production system and with routines that they believed were technologically outdated and that no longer made sense from a value creation standpoint. Finally, when we asked questions about true innovations in knitwear production in Europe, such as Benetton's remarkably successful industrial logistics system, industry insiders claimed that "it's a different business, we don't do that sort of thing" (see Lorenzoni & Baden-Fuller (1995) for a discussion of Benetton's unique system).

Unfortunately, our quiet intuition in 1989 has largely been borne out in subsequent industry developments during the past twenty years. The Gross Value Added of output from the Scottish textile sector decreased by half from 1995 to 2005 (Scottish Executive Report, 2005), with clothing output declining even more. The Borders knitwear industry, in particular, has significantly shed employment in its ongoing efforts to rationalize production and align with a lower revenue base. Between 1981 and 1998, industry employment declined by over 40%, and has dropped even more in the past decade (report of Scottish Parliament, 2000). Dawson International, the confident leader of the industry in 1989, has divested many of its operating companies and dismantled the vertically integrated production system that was the hallmark of the company's corporate strategy. Iconic Hawick firms such as Pringles, Peter Scott, and Ballantyne have been sold to Asian and Italian rivals, merged with other brands, or taken into administration. Many smaller producers have permanently closed their doors as well. And, as jobs and tax revenue have disappeared, the community of Hawick has struggled to adapt to the

changing economics of the region. A 2004 article in *The Scotsman* referred to the town as a "third world economy" because of the loss of high paying jobs and the displacement of skilled workers (Chisholm, 2004). To be fair, some firms in Hawick are still doing well, and a recent report on local cashmere production suggests that the worst of the decline may be over and that there is still a viable export business for "…a flexible, innovative and dynamic cashmere industry which is focused on high quality, niche markets" (report of Scottish Enterprise, 2007, p. 37). Then again, the report's recommended actions – i.e., "effective brand development," "design creativity and flair," "high quality," and "not competing on price" (p. 38) -- were exactly the same goals of the industry twenty years ago.

This last point, we believe, reinforces our fourth, and perhaps most important, observation coming out of the Scottish study: the cognitive and material aspects of the knitwear industry (indeed, all industries) are thickly interwoven. It seems to us that it is this intermingling that makes strategic imagination, innovation, and new ways of acting so difficult, and the downward spiral of mature businesses so problematic. We started off our investigations into the knitwear industry making a sharp distinction between a "cognitive" and a "material" perspective on organizations and markets. We felt that this distinction had good support in the literature of the day. Neo-institutional theorists, for example, had contrasted socially constructed "myths" and organizing beliefs with the "rational" or "technical" aspects of organizational functioning (e.g., Meyer & Rowan, 1977; DiMaggio & Powell, 1991). Moreover, the nascent managerial and organizational cognition movement had gotten its start because cognitive activists were dissatisfied with simply assuming that the economic world pressed itself onto the consciousness of

organizational actors in automatic fashion by dictating certain rote managerial choices. The new movement adopted as its rallying cry the insight of Simon (1947) and March and Simon (1958) that managers act on the basis of their cognitive representations of the environment, not the environment per se, thus making it necessary to study managerial cognitive representations as the proximal causes of organizational actions.

As cogent as this rallying cry seemed to be, however, the more we looked at the knitwear case, the more we saw strong "enactment" processes working to synchronize the cognitive and material aspects of knitwear production. An existing belief system (e.g., "We are the best in the world at fully-fashioned cashmere knitwear") led to particular types of investments in equipment and personnel (e.g., fully fashioned knitting machines), which then led to particular types of products (e.g., fully fashioned knitted garments). If not completely irrevocable, these investments were costly enough to reverse that they motivated marketing and product promotions that rationalized and reinforced the belief system that induced them (e.g., "If you want the best fully-fashioned knitwear, you have to get them from Scotland). This enactment cycle is, no doubt, the essence of a good "focused" strategy. However, by stabilizing over several generations, it had become much more than a strategy or a cognitive frame, it had become a way of life. Indeed, the cognitive data that we were assessing in our research (e.g., competitor definitions, strategic group classifications, etc.) seemed almost superficial outcroppings of a much more materially and socially embedded system of activities. If the competitive "myopia" of the Hawick producers was simply a cognitive problem, a failure of imagination let's call it, we doubt that the industry would have had so much difficulty adjusting to global competition. It is the ultimate challenge, however, to change a

business model around which a value chain has been created and that has become so enmeshed in the expectations and material transactions of an industry.

Contemporary Connections

As Professor Kaplan notes so cogently, the landscape of cognitive research has changed dramatically since the three of us were ensconced in Hawick in the mid-1980's completing our research. The competitive myopia, stratification, and inertia that we observed among Hawick firms called attention to important gaps in the strategy and organizations literature at the time. Since then, however, these same gaps have been addressed by many other scholars, and we are now in a better position to understand what has happened in Scottish knitwear and, indeed, perhaps in other industries that have suffered from "maturity." Professor Kaplan does an excellent job of reviewing recent research in her companion piece, and there is no need to do so again. Instead, in the remainder of this paper we would like to once again draw from the Hawick case and briefly discuss four theoretical and empirical issues that, in our opinion, are still important open questions in need of further clarification: the dynamics of myopic enactment processes, categories and categorization processes in industries, competitive identities, and the problem of innovation in mature and declining markets.

Myopic Enactment. As strategy and organizations scholars, distinctions such as "cognitive" vs. "material," "social" vs. "technical," "economic" vs. "non-economic," and "subjective" vs. "objective" are basic cuts in our understanding of organizations and markets. They ground what we know and seem fundamental to our field. However, if one takes Weick's (1979) ideas on enactment and sensemaking seriously, such distinctions quickly get muddled and lose their cogency. They certainly became muddled

for us when studying Hawick knitwear producers. There are certain conceptual "primitives" that most management scholars would invoke to describe the Hawick enactment. Such concepts as "beliefs," "technologies," "investments," "incentives," "search," "feedback," and so forth come to mind. These are easy to agree upon, but what is less clear is the specific causal ordering of these primitives, since they all seem endogenous to each other. Hawick producer beliefs guided investments, but these investments then constrained beliefs. Incentives influenced search, but search discovered payoffs. Investments created new technologies, but investments required knowledge about existing technologies to be justified. In an enacted matrix of primitives, almost any causal ordering seems plausible, if not obvious. How is it even possible to track such complexity empirically?

The dominant approach in the literature to dealing with this complexity has been to study partial sets of causal primitives, but not the entire enactment process. In 1989, we studied Hawick beliefs while making assumptions about investments and feedback. Others have studied investments (or choices) while making assumptions about beliefs. Greve (1996; 1998), for example, studied competitive myopia among radio stations and found that the likelihood of imitating rivals in investing in a new radio format was influenced by such variables as geographical proximity, corporate structure, and market contact. Greve concluded that belief uncertainty was a driving factor in competitive myopia, but didn't measure such uncertainty directly, nor search nor feedback. Others have studied investments and beliefs while inferring feedback and incentives (e.g., Tripsas & Gavetti, 2000). Still others have studied investments, search, and feedback, and have inferred (or assumed) beliefs (e.g., Gavetti & Levinthal, 1999). These partial

explorations of myopic enactment have advanced the field and created the empirical grist for theorizing about the co-opting power of local contexts. And yet, additional theory seems desirable to pull these partial empirical strands together into a systematic framework. Levinthal and March (1993) is one step in that direction, as is Weick (1995), but there is much work to be done to build and test a general explanation for why firms often get trapped in their locally enacted market spaces. For Hawick, twenty years seems like a long time to be searching for profitable solutions to the rise of global competitors. That this search has seemingly ended badly for the industry is theoretically perplexing. The forces producing myopic enactment must be powerful indeed.

Categories and Categorization. In our Hawick research, we were interested in capturing managerial representations of competitive space as they were revealed in the stories and narratives generated in situ by the managers themselves. This interest was spurred by the strategic groups literature, and other strategic group researchers followed with insights of their own (e.g., Reger & Huff, 1993; McNamara et al., 2002; McNamara et al., 2003, Hodgkinson & Johnson, 1994; Hodgkinson, 1997; Peteraf & Shanley, 1997). Although strategic group research has not been as active during the past decade as it was during the 1980's and 1990's, scholarly interest in categories and categorization is currently as high as it has ever been, although with slightly different foci. For example, rather than measuring managerial categorizations in situ, economic sociologists have studied how formal category nomenclatures (e.g., rating systems, product taxonomies, industrial classification systems, etc.) shape and constrain evaluations of producers by external actors (e.g., Rao, Monin, & Durand, 2005; Ruef & Patterson, 2009; Hsu, 2006; Zuckerman, 1999). Rao et al. (2005), for example, studied how the "classical" vs.

"nouvelle" distinction in French cuisine influenced the evaluation of restaurant establishments by the Michelin Guide, and Zuckerman (1999) examined how Standard Industrial Classification codes shaped the evaluation of companies by investment analysts. Much of this work has shown that when firms cross category boundaries, or do not fit easily into a dominant category, they encounter an ambiguity "discount" and are evaluated less positively than prototypical firms (e.g., Hannan et al., 2007). We found evidence in our Scottish study that the "industry model" of knitwear producers was "sticky" and that the constituent categories acted like "snap-to grids" when knitwear producers assimilated local competitor variations into their dominant categorical nomenclature (Porac et al., 1995). More recent work has taken the "stickiness" of industry categories further by extending it to the evaluations of firms by other members of organizational fields as well (e.g., critics, analysts, customers, etc.).

Within strategic management research, interest in categorization has also begun to emerge among researchers studying the content and dynamics of "business models" (see, for example, the special issue of *Long Range Planning*, 2010 on the topic). According to Baden-Fuller and Morgan (2010), business models "provide a set of generic level descriptors of how a firm organizes itself to create and distribute value in a profitable manner" (p. 157). As such, business models are middle ground descriptions between the unique attributes of individual firms and very general theories about how firms are organized and managed. Baden-Fuller and Morgan argued that these middle ground descriptions are important for the advancement of strategy theory and practice because they help to organize the particularities of individual firms into a more general system of classification. In their words, "the general idea of business models is intimately linked

with notions of taxonomies and 'kinds'" (p. 157).

Latour (2005) argued that all action is local but there arises in social life the need to take stock of local contexts so that locales can be "transported" and used (for varied purposes) by others who are removed from their minutia. Thus, he argued that, "From time to time, contexts are gathered, summed up, and staged inside specific rooms into coherent panoramas adding their many contradictory structuring effects to the sites to be 'contextualized' and 'structured'" (p. 191). Formal categorization systems and taxonomies serve this structuring role by summarizing local variations into more general narratives that are transportable across contexts (e.g., Bowker & Star, 1999). Every restaurant in France, for example, is no doubt locally unique, but the generic distinction between "nouvelle" and "classical" cuisine captures salient similarities and differences among them. Just as importantly, the publisher of the Michelin Guide attempts to evaluate these salient attributes in a way that is useful and meaningful to non-chefs who may have only the slightest knowledge of restaurant operations themselves. However, as Bowker and Star (1999) suggested, and the recent work on the "ambiguity discount" shows, formal classifications cut both ways. They enable and they constrain, and they can serve purposes that are beneficial or detrimental to the actors being classified.

This conclusion reinforces and expands our 1989 observation that myopic enactment processes extended out from Hawick knitwear producers to other value chain participants, and that these others were just as involved in the sensemaking process, and just as likely to codify and categorize, as the producers were themselves. But there is still much to understand about how category creation and stabilization occur within industry value chains. Trade association directories, sales brochures, industry catalogs, and the

like are published with the goal of projecting producer information outward to consumers, retail buyers, suppliers, and critics. These other participants in the value chain also construct models, categories, and portable codes to assist them in building a "panoramic view," to use Latour's (2005) words, of producer variation. Similarly, market surveys are done to provide panoramic views of buyers for producers, who create their own sets of categories for understanding the other side of the market interface (i.e., market "segments"). Once constructed and internalized, these codes create expectations up and down value chains. As Zuckerman and Kim (2003) noted, if categories become institutionalized enough across a market, they become part of the market's taken-for-granted role structure. Exactly how this happens, however, is still very much an open question. A recent paper by Ng et al. (2009) suggests that cognitive consensus across a value chain may be more of the exception than the rule, which makes industries such as Scottish knitwear even more interesting.

Identities and the Competitive Cusp. The constraints from industry categories and codes create countervailing forces on firms rooted in an enacted categorical system. In 1989, we labeled these countervailing forces the "competitive cusp" by suggesting that Hawick firms had to balance being too similar to and too different from rivals, a tenuous balance at best. The optimal location within a product characteristics space is, of course, a longstanding problem in industrial economics. Hotelling's (1929) seminal insight was that it is often profitable for firms to move close to each other in their product locations. Conversely, theories of monopolistic competition have historically emphasized product differentiation and dissimilarity in market space (e.g., Robinson, 1933; Chamberlin, 1933). Indeed, a good deal of modern industrial economics has attempted to work out the

oppositional demands of similarity and difference logics in market positioning (e.g., Sutton, 2007).

The research on market categorization, however, adds complexity to this issue because it suggests that cognitive categories create market membership boundaries that act as a second layer of competitive discriminations in market dynamics. On the one hand, firms must first conform to categorical expectations to be considered an authentic member of a category by other actors arrayed in and around a value chain. Non-conformance risks incurring an ambiguity discount and not being considered "in the game." On the other hand, it is not enough to simply be perceived as in the game. Firm-level value appropriation requires that a firm must be unique enough from other firms in the same game to be perceived as having "added value" in the market (e.g., Brandenburger & Stuart, 1996; Makowski & Ostroy, 2001; McDonald & Ryall, 2004). How this perceived uniqueness is achieved while still being considered "in the game" is a major theoretical and practical question regarding the cognitive micro-foundations of strategy.

Since our 1989 paper, different solutions to the competitive cusp have been proffered in the strategy and organizations literature. Deephouse (1999) posited a "one-step" solution by arguing that firms will be most profitable when they position themselves at middle distances from the center of firms clustered on a given set of attributes. Deephouse tested this argument in a sample of banks from a single metropolitan area and found evidence for an inverted-U relationship between distance from the mean attribute position in the industry and firm profitability. According to Deephouse, middle positions across a set of attributes provide a satisfactory

rapproachment between conformity and differentiation pressures.

In contrast to Deephouse's one-step approach, both Zuckerman (1999; Phillips & Zuckerman, 2001) and Porac and Thomas (Porac & Thomas, 1990; Porac et al., 1995) offered "two step" solutions to balancing on the competitive cusp. Borrowing the concept of "evoked set" from marketing, Zuckerman suggested that firms are first evaluated for their membership in a category and must demonstrate enough conformity on the category's defining attributes to be perceived as a legitimate category member. Those firms that do not conform to core category attributes are rejected as illegitimate. Once this membership "cut" is made, however, legitimate category members must demonstrate their distinctiveness vis-à-vis each other. One way of showing distinctiveness is to deviate on new attributes or behaviors (e.g., Phillips and Zuckerman, 2001). Following Deephouse, another would be for category members to array themselves at middle distances from the category centroid on some or all of the defining attributes.

We proposed a similar two-step process from our work in Scotland (Porac & Thomas, 1990; Porac et al., 1995), with one subtle difference. From Rosch and Lloyd (1978), we argued that industry categories form around the attributes that are most correlated with others – what we called "diagnostic" attributes. Attributes are diagnostic when they provide clear predictive information about a firm's position on other attributes, thus efficiently summarizing the organizational field for participants. We proposed that firms must conform to other category members on diagnostic attributes, but seek differentiation on non-diagnostic attributes that may provide additional value generating possibilities "in the game."

Clearly, more research is needed to understand how firms balance conformity and distinctiveness in markets with strong categorical structures. One- and two-step processes for managing the competitive cusp are not mutually exclusive, and how they get intertwined probably depends on a variety of factors acting on market actors such as the age of the firm, its size, and the category structure of the industry. As just one issue, how is that some attributes get selected out for categorization and others go unnoticed? Following Rosch and Lloyd (1978), we suggested that the information value of attributes is a key factor in promoting attribute salience, but are their other cognitive, competitive, and institutional drivers as well? Moreover, much more research must be done to connect these categorization processes to economic (e.g., bargaining power, rivalry) and performance (e.g., profitability) variables. Theoretical linkages between the dynamics of value chain identities and the economics of an industry have not often been made in the strategy and organizations literature. Rao et al (2005), Peteraf & Shanley (1997; 2004), and others have provided a start on these issues, but much more work needs to be done to follow their lead. So-called "coalitional" models of competitive advantage (e.g., Brandenburger & Stuart, 1996; McDonald & Ryall, 2003) also seem like a promising venue in which to explore such linkages.

Myopic Enactment vs. Innovation. All of the above suggests strongly that the "cognitive oligopoly" that we discovered in Hawick in 1989 was (and perhaps still is) a predictable result of the fundamental process of market enactment and the institutionalization of an old and traditional organizational field. Although the details of these processes receded and became "invisible" long ago, more recent research and theory appearing since we studied Hawick suggest a basic set of constructs to account for

what has happened at a cognitive level. The process was set in motion by "structural" uncertainty (e.g., Langlois, 1986), which led value chain participants (e.g., firms, buyers, suppliers, critics, designers, consumers, etc.) to look to each other for cues on what products should be made available, the quality orderings among these offerings, revealed preferences along the value chain, and behavioral variations among chain participants (e.g., White, 2002). As learning progressed, categories of understanding (e.g., "fully fashioned knitwear") and perhaps "dominant designs" (e.g., Abernathy & Utterback, 1975) emerged to stabilize expectations up and down the value chain, guide choices and investments, and harmonize transactions. To reduce uncertainty and lubricate transactions even more, common understandings were codified into formal classifications and rating systems (yarn gauges, knitwear production styles, etc.), which then became embedded into value chain routines, transactions, and the evaluations of market "mediators" such as critics and journalists (e.g., Rao et al. 2005; Kennedy, 2008). Over the years, industry participants settled into a predictable pattern of interactions, and learned from each other how to adapt to any changing circumstances that came their way. A competitive shakeout cemented industry positions by eliminating weaker rivals, the rate of new entrants into the industry slowed, and incumbent investments in new product and process technologies flattened out (e.g., Klepper, 1996), making incumbents vulnerable to more innovative and perhaps more agile new entrants from both Scotland and abroad.

This general theoretical narrative accounts for many of the difficulties that Hawick knitwear firms have had in adjusting to the realities of global competition, and probably is equally applicable to many other industries that have been or are currently in

trouble. Within this enacted and institutionalized world, Scottish producers have been constrained to local search across a landscape that they have largely constructed themselves. Enactment tends to favor the present rather than the future, the near rather than the far, and successes rather than failures (e.g., Levinthal & March, 1993). Myopic enactment means that radically new ideas are hard to generate for industry insiders, that innovation is incremental, and that firms will undergo major changes only when they are shocked into doing so by dramatic exigencies and strong new entrants. Even then, firms will rely on each other for guidance on what to do (e.g., Greve, 1996), or, at best, reason through limited analogies to help generate alternatives for the future (e.g., Gavetti et al, 2005).

Although this account of the Hawick situation seems compelling, the account is probably only partially correct, at best. First, and most importantly, it downplays the creative potential of managers and organizations. After all, imagining "possible worlds" via counterfactual reasoning is perhaps the most unique and quintessential characteristic of the human mind (e.g., Byrne, 2005; Harris, 2000). As Leonard-Barton (1995) once noted, organizations are "wellsprings of knowledge" that exist to be harnessed for productive and innovative ends. Generating interesting and potentially profitable strategic options does not seem to us to be the cognitive bottleneck in industry decline. Rather, calculating payoffs, allocating resources across the many promising options that are available, and then successfully implementing the chosen course seem much more difficult problems given how deeply these latter activities are embedded in the material and social fabric of an industry. For example, in their study of how disk drive manufacturers adapted to technological shifts in the industry, Christensen and Bower

(1996) observed that incumbent firms reported little trouble imagining new technologies and developing prototypes for new products. It was in allocating scarce resources among many competing projects, particularly key legacy products targeted for important existing customers, where managers reported experiencing difficulties and tradeoffs.

Second, this narrative doesn't account for the fact that, even in highly institutionalized industries such as Scottish knitwear, firms vary in their performance, innovativeness, and willingness to experiment. How firms respond to external developments is no doubt shaped by any number of idiosyncratic firm- and managerial-level factors. Within the past twenty years, in fact, a large strategy and organizations literature has developed attempting to account for differential rates of innovation and adaptation among firms. Firm age, managerial experience in the industry, and a firm's position within social and intellectual networks have all been implicated in the speed and efficacy of adjustment to industry shocks (e.g., Schilling, 2009). Just as one very relevant example within the managerial cognition literature, Eggers and Kaplan (2009) assessed the response of communications infrastructure firms to emerging optical technologies and found that the speed of response to this technological discontinuity varied across firms according to the attentional focus of CEOs in the industry.

Firm-level heterogeneity in adapting to business conditions has certainly been apparent in the Scottish knitwear case. Despite the press of the Hawick Mind, companies such as the Hawick Cashmere Company, for example, have bucked the overall sector malaise by incorporating new technologies and strategies that have kept them competitive and at the cutting edge of global knitwear design (e.g., Friedli, 2003). Such examples are bright spots in an otherwise bleak industry story and serve to qualify any generalized

account of industrial decline. Indeed, it was exactly these sorts of trend breaking innovators that led Baden-Fuller and Stopford (1992) to conclude that maturity is a state of mind rather than an immutable market condition.

Third, as Strang and Still (2006) noted, structural uncertainty plays a particularly large role in the above explanatory account, perhaps too large. Not only is uncertainty an exogenous variable rarely measured directly in research, it is also the case that different theories of organization support opposing predictions about the role of uncertainty in market processes. While social constructionists have argued, for example, that uncertainty promotes imitation and myopia, resource-based accounts view uncertainty (e.g., "causal ambiguity") as an "isolating mechanism" or "mobility barrier" that often makes it difficult for firms to replicate the practices of others. When we interviewed Scottish managers twenty years ago, in fact, "causal ambiguity" (i.e., "Nobody can do what we can do") was their implicit explanation for why foreign competition was finding it difficult to make inroads into the upmarket cashmere knitwear segment. That such firms eventually did successfully break into the industry not only raises questions about the level of uncertainty in the industry, but also about the explanatory role that uncertainty can play in any account of the troubles eventually experienced by Scottish firms.

Finally, research suggests that imitation is not blind but is customized to fit the imitator's local situation and needs (e.g., Fiss & Kennedy, 2009; Strang & Still, 2006). So, there is a strategic aspect to "myopia" that is not wholly explained by uncertainty reduction per se. Latour (2005) argued that even categories and codes can be used strategically given that they are transportable summaries of local contexts that can

connect to a variety of both local and global interests. As Professor Kaplan notes, these strategic considerations are matters of incentives as much as cognition, and constructionist accounts have not been particularly good at dealing with incentive considerations.

At issue here, we suggest, are two views of market processes in the strategy and organizations literature that have not yet been fully reconciled with each other. Economic sociologists and institutionalists have tended to view markets as uncertainty reducing configurations that press toward closure, variety reduction, and conformity. Strategy researchers have tended to view markets as uncertainty maintaining configurations that press toward openness, variety creation, and competitive differentiation. Innovation is not easily explained within the former approach (e.g., "deinstitutionalization" "deviant social movements"), while strict conformity is only one of many market configurations (i.e., the perfectly competitive market) within the latter. Economic sociologists tend to begin theorizing with the role of collective institutions and then derive individual firm behavior, while strategy researchers have increasingly emphasized individual firm behavior and then derive collective institutions.

It is in reconciling these two viewpoints that middle level constructs such as "strategic groups," "categories," and "business models" can play an important role. As McGee and Thomas (1986) noted almost twenty-five years ago, and Baden-Fuller and Morgan (2010) reminded us most recently, middle level market constructs are touch points between industry collectivities and firms, and we believe that there is still much theoretical traction to be found at these middle levels. The theoretical richness and utility of institutional processes, and their enactment micro-foundations, is very obvious, but

these processes have been conceptualized at the field level, and it is difficult to explain firm-level variation, competitive advantage, and market discontinuities from field-level processes. At the same time, resource-based models of firm-level heterogeneity have very little to say about the collective myopia that we observed in Hawick Scotland. If anything, resource-based models might suggest that such homogeneity is ephemeral and unstable. To the extent that "identity" plays a role in industrial recipes and conformity, it seems to us that the concept of "identity" is inherently macro and beyond the boundaries of a single firm. A firm can have an identity only when it is included in a collective system of categories and constructs that crosscuts industries, vertically as well as horizontally. In our opinion, middle-range constructs such as "groups," "categories," and "business models" still provide a viable and particularly attractive way of addressing this gap in the literature.

Summary and Conclusions

Over twenty years has passed since we published our "Cognitive Communities" paper in the Journal of Management Studies, and the phenomena that attracted our attention in the Borders knitwear industry in the 1980's are compelling to us even today, perhaps more so given the industry's subsequent decline. We began our investigation with the goal of uncovering the cognitive microfoundations of strategic groups and, more broadly, of producer markets. As we moved forward with the project, producer categorization processes and resulting belief systems did emerge from our work and were certainly interesting and theoretically meaningful. However, as we spent more time in Scotland, a much more general and intractable puzzle began to co-opt our time and attention. How is it that an industry composed of skilled and vibrant firms with a

hundred or more years of success in producing knitted garments, and backed by an unmatched reputation for product quality, is finding it so difficult to adapt to technological change and, more importantly, to the challenges posed by upstart foreign rivals? The very fact that we began to ask this question was striking to us because we had started the project with the understanding that the Hawick knitwear industry was having success in adapting to changing business conditions.

As we probed for answers to this question, we began to appreciate much more deeply the complexity of the Hawick Mind as a theoretical conundrum. How established firms adapt to changing external conditions is a problem that has attracted much research attention by strategy and organizations researchers, economists, and public policy experts during the past twenty years. Social scientists now know quite a bit about the challenges faced by such firms in their struggle to overcome modern exigencies. However, Scottish knitwear is not a case where customer demand has shifted to a new product category, nor a case where rapid competence destroying technological change has left incumbents behind. The most compelling proximal explanation for the decline of the Scottish knitwear sector is that Hawick firms have found it difficult to adjust to the pricing pressure created in their markets by garments sourced from low wage Asian producers. At best, however, this is only a surface explanation because it begs the question of <u>why</u> Scottish firms have found it so difficult to adjust their prices and/or products to match competitive conditions over a period of twenty-five years. Indeed, other European knitwear producers (e.g., Italy) have faced similar pricing pressures, yet have fared much better in their adaptations.

It was in pondering the Hawick conundrum that we became dissatisfied with a

purely cognitive account of market processes. Our research helped to illuminate how cognitive structures underpin important competitive relationships in a market, but to us it also revitalized our interest in the material and social conditions of industries and how these get connected to market identities and cognition over time. In this regard, Fombrun (1986) made a cogent case for the need to consider three kinds of linkages among organizations when studying interorganizational relationships: resource and task interdependencies, power and domination, and relationships of signification and meaning (or, in our terms, "cognition"). Fombrun suggested that these three relationships become "interpenetrated" with each other over time within organizational fields, and that any account of the dynamics of a field will fall short unless attention is given to how this interpenetration occurs.

We made a very crude attempt to follow Fombrun's lead in our 1989 paper by arguing that Weick's (1979) concept of enactment provides one possible vehicle for linking these three different relationships together, but we understood that our enactment perspective was very incomplete and left much on the table to be explained. We also understood that our account was biased toward emphasizing relationships of signification because, after all, we began our Scottish research with the goal of exploring the role of cognition in intra-industry stratification. Even today, however, Fombrun's three level typology of interorganizational relationships, and his claim that a thorough account of an organizational field must include all three, seem to us to be a possible pathway toward unlocking the complexity of industrial decline.

Perhaps it is overly ambitious to aspire to the sort of integrated explanation of industry dynamics that Fombrun championed twenty-five years ago. Resource, power,

and cognitive processes operating in industrial settings are complex in and of themselves, and each has spawned their own disciplinary emphases, specialized theories, and intellectual communities over the years. It is difficult to theorize at the intersections of these communities, and even more difficult to publish multidisciplinary research. On the other hand, the management research community is multidisciplinary by its very nature, and scholarly outlets such as the Journal of Management Studies are welcoming venues for exploring the interstices of scholarly fields and causal theories. It was the promise of what scholarly boundary crossing might reveal about industrial dynamics that motivated a statistical decision theorist, a social psychologist, and an economist to collaborate on the 1989 "Cognitive Communities" piece, and we very much believe that the promise is still there, perhaps even more so given increasing specialization in the social sciences. We also believe that how industries adapt to changing circumstances is still an open question, and much more research remains to be done to understand it.

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