

Strategic Groups and the Analysis of Market Structure and Industry Dynamics¹

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SUMMARY This paper provides an overview of strategic groups research and argues that it should be linked more closely to questions central to strategic management. Particularly fruitful directions for future research include industry evolution, competitive and industry dynamics, and linkages to resource-based theories. Specific observations and suggestions are made about the content and method of strategic groups research. These are illustrated by reference to empirical studies of the pharmaceutical industry and the food processing industry.

1. Introduction

1.1. Structure of the Paper

The strategic groups concept (McGee and Thomas, 1986) directs attention to those groups of firms in an industry which may actively compete with each other by virtue of their investment in apparently similar distinctive assets, strategic resources and core competences (Penrose, 1959; Prahalad and Hamel, 1990).

This paper is intended to provide insight into the current state of strategic groups research, to suggest improvements and future directions for the research stream, and to demonstrate the kind of research we believe will be highly fruitful for the field. Our underlying theme is that such research needs to be more closely linked to questions central to strategic management. In particular, we believe the grouping concept can be particularly useful for continued research on industry evolution, compe-

tion and industry dynamics, both in the shorter and longer run.

First we provide an overview of the strategic group concept for readers wishing this background. We then turn to identifying broad patterns in the research stream: reliance on readily available data, a focus on convenient industry settings, the use of *a priori* classifications, and the push to a better understanding of industry dynamics. This leads to a series of specific observations and suggestions about the content and method of strategic groups research. This is where the reader will find a number of specific ideas about how future research might be designed. These suggestions are illustrated by comparing and contrasting two empirical studies, one on the pharmaceutical industry and one in food processing.

1.2. Overview of the Strategic Group Concept

Hunt (1972) focused on strategic groups explaining heterogeneity of competition within the home appliance industry. Hunt had expected to observe that all firms would prefer one optimal strategy which would reflect the most effective way in which a firm could approach a market. This expectation

¹ This paper draws strongly from the authors' previous research papers and reviews in this field, particularly McGee (1985), McGee and Thomas (1986, 1989), Thomas and Venkatraman (1988), and Fiegenbaum and Thomas (1990). Its structure, however, reflects the authors' current views on the subject.

had its roots in the field of industrial organization (IO) and is drawn from the view that all firms are similar except for size differences and that all firms face the same environmental opportunities and threats. It follows from such a view that all firms should be pursuing the same optimal strategy and that strategic choice becomes deterministic. However, the presence of groups of firms clustered around different strategies presents a different view (McGee and Thomas, 1986). Consistent with a contingency view of strategic management (Galbraith, 1973), managers are shown to be faced with alternative choices about how they will compete in markets. Alternative strategies have greater or lesser attraction for individual firms due to the variations in their resources, competences and prior positions. The general manager is, therefore, faced with the task of trying to position the firm in the strategic group which best fits the firm's strengths (i.e. its asset base).

Among themselves, group members compete directly because they share similar assets, strengths and competences. They target the same customers and can quickly copy the competitive moves of a rival. Competition between firms from different groups may then be less vigorous. However, membership in some groups is considered to be more desirable because of the attractiveness of that group's market or the absence of competitive rivalry. *Ex ante* it would, therefore, be expected that all firms would try to enter the most desirable group.

At the level of the individual firm, the asset stocks and organizational inertia resulting from managers' decisions create mobility barriers around groups of firms following similar strategies (Mascarenhas and Aaker, 1989). Group membership generally remains stable over time in many industries because these barriers foreclose easy movement to more desirable competitive positions. Although these barriers have often been compared to entry barriers (Bain, 1956; Caves and Porter, 1977), mobility barriers exist among competitors already in a marketplace with some degree of investment in a competitive posture. Investments in assets both tangible (e.g. plant and equipment) and intangible (e.g. name and reputation) and the uncertainty about a firm's ability to copy successful competitors (Lippman and Rumelt, 1981) contribute to the height of mobility barriers separating groups. So, too, the establishment of standard operating procedures, bureaucracy and organizational culture may inhibit a firm's ability to change

strategic groups, thus mobility barriers may be asymmetric at the firm level. Mobility barriers may vary in height based on the extent to which firms outside a target group have to change their strategies in order to join the target group and the economic return which is expected to be gained by making the change. It is expected that the higher barriers surround the more profitable groups.

The varying attractiveness of different strategic groups in an industry (along with variation in the associated mobility barriers) suggests that firms may follow a series of sequential steps in improving their competitive positions within an industry. Instead of attempting to enter an industry by initially entering the most desirable (and most protected) group, a firm may enter a group surrounded by lower mobility barriers. The firm may then proceed along a path through the industry, collecting assets, building competences, moving sequentially into more desirable groups and at some point perhaps failing to progress further (McGee and Thomas, 1990). This progression suggests that strategic groupings may change over time either because firms may proactively change their strategy or because environmental discontinuities may disrupt the foundations on which the strategies of the various groups are built. This sequential progression may be short circuited, for example by mergers and acquisitions or by divestitures. The relatively quick changes in an industry's competitive structure made possible by such moves will be touched on later in this paper in a discussion of the European food processing industry.

Porter (1979) and Hatten and Hatten (1987) provide useful overviews of major theoretical explanations and uses advanced for the strategic groups concept.

Porter (1979) provides three main explanations for the formation of strategic groups:

- (1) Investments in building mobility barriers are risky and firms have different risk aversion postures; this leads to different groups defined in terms of R&D and advertising outlays as defensive mobility barriers.
- (2) Business units which differ in their relation to a parent company may differ in goals in ways that lead to strategy differences.
- (3) Historical development of an industry (nature of demand, production technology, product characteristics, etc.) bestows differential advantages/disadvantages on firms.

A fourth possible explanation, relegated by Porter (1979; p. 217) to a footnote, is exogenous causes such as technological change:

'Changes in the structure of the industry can either facilitate group formation, or work to homogenize groups. For example, technological change or changes in buyer behaviour can shift industry boundaries bringing entirely new strategic groups into play in the industry by increasing or decreasing product stability and hence shifting relevant industry boundaries.'

By occupying an intermediate level of analysis between firms and industry, strategic groups are helpful for identifying issues about an organization's competitive position. Who are the direct competitors? What are the competitive forces? What are the distinctive competitive assets that lead to sustainable competitive advantage? Indeed, the key to understanding industry evolution lies in the ways in which firms change their asset structures. In other words, the way in which mobility barriers change and redefine the strategic groups can enable predictions about future industry evolution.

For Hatten and Hatten (1987; p. 329), strategic groups can provide the strategic analyst with potentially powerful tools. They suggest that:

- (1) Groups can be used to preserve information about individual firms which is typically lost in industry studies using averaged and aggregated data.
- (2) Because groups allow us to investigate multiple firms concurrently, they allow us to assess the effectiveness of their strategic actions over a wider range of variation than a single firm's experience affords.
- (3) Group analysis can be used to summarize information to bring key dimensions into high relief. For example, to facilitate an assessment of the consequences of a collective movement by many firms into smaller competitive postures or to verify similarities of strategic direction across an industry.'

However, as we will see in subsequent sections, many questions remain concerning the overall role of strategic groups and firm linkages in strategic management research. Further, the concept merits more careful application and implementation than it has sometimes received.

2. Research Findings

The authors have provided exhaustive reviews of strategic group research in previous papers (McGee, 1985; McGee and Thomas, 1986, 1988; Thomas and Venkatraman, 1988). We refer readers interested in in-depth exploration of strategic groups to those sources, and to the more recent research of Bogner *et al.* (1993), Cool (1985), Cool and Schendel (1987, 1988), Fiegenbaum (1987), Fiegenbaum and Thomas (1990), Mascarenhas (1989), McGee and Segal-Horn (1990), and Thomas and Daems (1994).

Here we discuss notable research patterns. We then make a number of observations about existing research, and suggest how those observations might be addressed or rectified in subsequent research.

2.1. Research Patterns

Certain clear patterns can be detected in existing research: reliance on readily available data, a focus on convenient industry settings, the use of *a priori* classifications, and a concern for a better understanding of industry dynamics.

First, many studies could be described as 'data driven' since they rely on analyses of dimensions drawn from well-known data bases such as COMPUSTAT and Value Line. By defining groups in terms of 'parts of strategies' using variables such as product lines (Hunt, 1972), relative size (Porter, 1979), product strategy (Oster, 1982) and financial strategy (Ryans and Wittink, 1985), there appears to be an *ad hoc* character attached to the development of those groups.

While the groups in such studies may be highly homogenous in terms of their clustering variables, they may not correspond to the competitive groups within the particular industry. For example, in the brewing industry studies (e.g. Schendel and Patton, 1978), the three groups are mainly defined around the geographical scope dimension and labelled as 'national', 'large regional' and 'small regional'. Such a classification could explain the intra-industry and inter-group differences in the average profitability levels (using the well-known 'size effect' in IO). However, it does not necessarily reflect the domain of a firm's competitive arena, which may be more important from a strategy perspective. This is because, in a given market area competing brands belonging to 'national' firms, 'large regional' firms and 'small regional' firms may

all be jockeying for a share of the same market demand. The market is likely to be more interested in the product than the size of the producer.

Therefore, the first important issue is to question whether the strategic groups identified in many studies correspond to managers' perceptions of competitive groups in those industries. Clearly, in industries such as airlines (Ryans and Wittink, 1985), banking (Ramsler, 1982), brewing (Hatten and Schendel, 1977) and home appliances (Hunt, 1972) there appear to be well-established competitive classifications which could provide an additional test of the validity of empirically derived strategic groupings.

Second, research studies have concentrated on manufacturing industries. Such studies include medical supply equipment (Howell and Frazier, 1983), paints (Dess and Davies, 1984), brewing (Hatten and Schendel, 1977; Hatten and Hatten, 1987), producer goods industries (Newman, 1973, 1978), petroleum (Primeaux, 1985) and the home appliance industry (Hunt, 1972). Studies in the service sector include banking (Hayes *et al.*, 1983), insurance (Fiegenbaum, 1987), and airlines (Ryans and Wittink, 1985).

Researchers' choice of industries seems based primarily on the extent to which the firms (within an industry) operate in one dominant business category. This lessens the problem of isolating data for a particular business from the overall portfolio of a diversified corporation. When primarily single business industries (such as US brewing or airlines) are studied, the strategic problem can essentially be cast in business strategy terms. However, in more complex industries the problem becomes more difficult.

When developing theory, strategy researchers must move away from research based upon choices of 'convenient' industry settings towards studying firms which operate in multiple businesses. Given the increasing trend towards corporate diversification (Chandler, 1990), it is important to understand the strategic groups concept in the context of complex firms and complex industries. These typically involve diversified firms which compete across industry boundaries and may possess strong financial resources (and burdens) derived from operations in other business areas (McGee and Thomas, 1988; see also Sjoström, 1994). The growing literature on multimarket contact seems particularly relevant here (e.g. Bernheim and Whinston, 1990; Feinberg, 1985; Scott, 1982).

Third, earlier work on strategic groups focused more upon *a priori* classifications ('rule of thumb' strategic mapping) than on empirical approaches (such as multivariate analysis) as bases for identifying strategic groups. There is now a renewed focus upon understanding industries, and on mapping and interpreting strategic groups based on better defined strategic dimensions (Porter, 1980; McGee and Thomas, 1989). Certainly, empirical grouping analyses must be performed only after careful definition of strategic dimensions.

Further, there is much interest in using strategic groups to understand industry dynamics. For example, Oster (1982) examined dynamic aspects of strategic groups and concluded that there was a low level of movement between strategic groups and relatively stable group membership over time within the industries she studied. Mascarenhas (1989) and Fiegenbaum *et al.* (1990) found similarly low levels of mobility in the oil and insurance industries. Ramsler (1982) used the strategic groups derived from the 100 largest non-US banks to predict the entry strategies adopted by banks in entering the US market. In the same vein, McGee and Segal-Horn (1990) predict the long-term dynamics in the European food processing industry, as discussed later in this paper. Thus, the study of strategic groups can lead both to a better understanding of current behaviour and to predictions about future competitive behaviour. An important empirical issue here is the difference between attempted (failed) moves by firms from one group to another and the strategy of strengthening performance while deliberately remaining in a particular group.

The brand patterns noted here led us to make further observations and suggestions about strategic groups research, as discussed in the following section.

2.2. Research Observations and Suggestions

Observation 1 Research has been dominated by considerations of industry structure and the existence of groups rather than by a concern with firm strategies.

Some studies have been criticized for appearing to have as their first (and, in some cases, the only) goal to establish that the chosen industry (or industries) is heterogeneous and that distinct groupings can be identified through clustering in terms of a set of appropriate strategic character-

istics. The typical approach is as follows: consider a particular industry (often defined in terms of national boundaries, usually the US), identify a set of strategic dimensions, obtain data on those dimensions (either through objective, secondary sources, or through perceptual measures provided by managers), employ one of the data reduction techniques, obtain a set of groupings, interpret them in the light of their scores along the dimensions used for the clustering procedure, and provide rather weak interpretations of the meaning of the groups for theory or practice.

Given the interest of IO research in heterogeneity within an industry, we are not surprised that some studies seek to demonstrate the existence of groups, i.e. 'structures within structures'. However, from a contemporary strategic management perspective, this may be a non-issue! Most of us at least implicitly subscribe to a view that firms differ in their strategies (Wernerfelt, 1984) but not to an extent that they cannot be sorted into homogeneous, meaningful classes. Indeed, the notion of generic strategies (e.g. Miles and Snow, 1978; Porter, 1980) builds on this view. As we will discuss, any empirical demonstration of the mere existence of some grouping within an industry is not a significant research result within strategic management, unless the observed grouping structure can be related to the expected structure through extant theory.

Observation 2 Industry and market boundaries are porous and 'fuzzy' especially where globalization is taking place.

The second observation pertains to the definition of an 'industry' or 'market'. Strategic groups researchers have defined their sample frames in terms of classical industry categories, largely limited to national boundaries, but a global perspective on strategic groups research would enrich research considerably. Defined in terms of the Standard Industrial Classification (SIC) scheme, the 'industry' has been for a long time the generally accepted unit and level of analysis in IO (Bain, 1956; Scherer, 1980). Yet even economists (Chamberlin, 1951; Robinson, 1956) have questioned the imprecision in industry definition and the 'fuzziness' of industry boundaries in economic environments characterized by product differentiation and technological change. Further, as one anonymous reviewer pointed out, markets (the demand side) can be as difficult to define as the supply-side

concept of industry. Perceptions of what constitutes firms' markets is central to managers' beliefs about competition, but these perceptions have received less attention in strategic groups research than has the supply-side perspective.

In general, given that strategic management is concerned with the efficient and effective process of alignment between the organization and its environment (Andrews, 1980; Venkatraman and Camillus, 1984), it seems inappropriate to be bound to an SIC scheme that mainly reflects product variations, or to one which limits the sample frame to national boundaries (Porter, 1980). It may be more appropriate to regard the concepts of market, industry and nation as complementary, and to adopt a more comprehensive definition of business and competition that captures variations in product, market and technology (Abell, 1980) and also reflects competition in input markets, process (technology) and the more conventional notion of output-based competition in a global perspective (Hout *et al.*, 1982; Porter, 1986).

A move away from the constraint of industry boundaries is the use of the concept of 'environmental types', which reflects patterns of competition across groups (Miles and Snow, 1978). This can be seen in attempts to identify groups of firms (or business units) that are following 'similar' strategies but are situated in environments that cut across industry boundaries. In this stream, the aim is to identify strategic taxonomies (akin to strategic groups) within a homogeneous environment (akin to an industry). This approach is useful for theory building, namely for evaluating strategy-performance relationships within and across different environmental profiles (see Hambrick, 1983, 1984; Miller and Friesen, 1978; Prescott *et al.*, 1986).

Suggestion: Justification of the Sample Frame

An SIC-based industry definition (restricted to a single country) that has routinely served to demarcate the sample domain in previous studies should not be implicitly accepted. The concept of the business strategy level—which focuses on competitive superiority in a marketplace—is *not* isomorphic with the definition of product-based industry boundaries (Porter, 1980). For instance, the boundaries between financial services industries have blurred in recent years due to technological, regulatory and global factors. Consequently, the explicit justification of the sample frame is an important design criterion.

Suggestion: Enlarge the Sample Frame Across National Borders

Strategic groups research has been marked by its limitation to examination of strategic groups within particular national boundaries. This may be appropriate if the competition is itself limited in this way, but given the increasing trend towards globalization of markets, future research should consider defining the sample frame to include multiple nations within one study. Thus, if the automotive market is truly international with participants organized on a global basis, then a rich study would focus on the entire marketplace rather than conduct separate studies of American, British, Japanese, or other groups. Such a direction would identify strategy differences across countries as well as shed light on multi-point global competition. It might also suggest that there is a need to link strategic group concepts with network perspectives (Nohria and Garcia-Pont, 1991).

Observation 3 There is no consistent pattern in strategic group characteristics.

There does not appear to be any consistent pattern in the characteristics of groups across the different studies reviewed here. In other words, the conception of the characteristics of strategic groups varies significantly, due mainly to non-uniformity in the choice of variables used for the definition of groups. In some studies, the groups are developed on size differences only (for example, Porter, 1979), others are based on geographical coverage (Hatten and Schendel, 1977; Schendel and Patton, 1978) while some others are based on specific features of the product market (for example, Hayes *et al.*, 1983). Thus one cannot meaningfully compare and aggregate the results across different studies.

Had such studies been anchored around a common theme of operationalizing strategy, it would have been possible systematically to see patterns across studies and to encourage replications which could lead either to cumulation or refutation of findings. This could be done by using typologies like Porter's or Miles and Snow's, or by using a more precise strategic group definition based on an asset-oriented set of strategy dimensions like scope and resource deployment. We are not advocating the use of any one particular typology for all strategic group studies, but we do favour relating the choice of strategy dimensions to previous studies so that a cumulative perspective can be brought to bear.

Suggestion: Richer Operationalization of Strategy
Strategic groups research is handicapped by inadequate attention to operationalization and measurement issues. Many studies have used strategy surrogates like size (see Hunt, 1972; Newman, 1978; Porter, 1979) or financial risk (e.g. Baird and Sudharshan, 1983). If we believe strategy is truly integrative and extends beyond a single functional area, then we should seek operationalizations that reflect the interrelationships among the functional strategies rather than the individual functional strategies *per se*.

Richer operationalizations are those able to reflect the complexities of the competitive situation—that is, by defining strategies (and strategic groups) in terms of firm-level investments in asset structures and distinctive competences (Rumelt, 1984; McGee and Thomas, 1989). A welcome trend is seen in the strategic group studies by Cool (1985), Fiegenbaum (1987), and Fombrun and Zajac (1987). It is naive to expect that complexities can be captured using simplistic schemes without sacrificing properties of validity and reliability. Our call for a richer and systematic operationalization of strategy for strategic group development parallels McKelvey's (1978) call for development of organization types using multiple dimensions, Hambrick's (1984) and Miller and Friesen's (1978) call for the development of strategy 'gestalts', and Venkatraman and Grant's (1986) discussion urging for improvements in the measurement of strategy in general.

In particular, the operationalization of strategy en route to the identification of the group structures should seek to match the key bases of competition or core competences in the marketplace (i.e. key success factors that form the basis for effective strategy development and which can be confirmed by industry experts). Although strategic group analysis itself can help to define the elements of competition, we nonetheless believe in the benefit of a closer linking of operational definitions to key factors identified *ex ante* by industry managers and experts. The use of managers' perceptions of the bases of competition seems crucial for such research, since it is managers' actions that result in firms' competitive behaviour.

Observation 4 The descriptions of groups lack clarity.

The most disappointing observation in this review is that the extant studies do not provide strong evidence of 'descriptive validity'—i.e. descriptions

of the strategic groups in a way that establishes that groups are internally homogeneous and maximally different from other groups. Although there are no well-established criteria for describing groups, it is generally accepted that the major characteristics are: (i) each group is composed of firms (or businesses) that follow similar strategies, (ii) firms within a group resemble one group, and (iii) firms within a group are more likely to respond similarly to market conditions. Support for the first two criteria may be provided through cluster analysis results. But the third criterion, which reflects an important theoretical issue, is usually not tested. However, no empirical research study has developed groups in such a way to satisfy all the criteria. It is possible that when the groups are defined *a priori* through in-depth analysis of the industry, researchers might have taken these criteria into account, but empirical demonstrations of them is lacking. The implication is that groups may reflect nothing more than statistical homogeneity. This requires a clearer articulation of the theoretical reasons for the existence of groups, such as spatial competition, population ecology, cognitive networks, or strategic choices (for a summary of the alternative foundations for the existence of groupings see Tang and Thomas, 1992).

Suggestion: Theory-Grounded Data Analysis

Given any data matrix (a set of firms or businesses along a set of variables), it is not difficult for numerical taxonomic methods to derive statistically significant groupings. The power of a study is not determined by a statistical demonstration of a set of strategic groups but, rather, through their interpretation in terms of the theory that guided the grouping exercise.

This issue is particularly significant given the inherent bias in cluster analytical methods in favour of uncovering groups. In cluster analysis, for example, several methods are available for evaluating the 'number of clusters' (Milligan and Cooper, 1985). But they typically focus on the evaluation of the superiority of an n_1 -cluster solution over an n_2 -cluster solution—in other words, a statistical indication of the superiority of a three-cluster solution over an alternative five-cluster solution. However, they are limited in providing support for the critical test of assessing the appropriateness of an n_1 - or an n_2 -cluster solution against a zero-cluster solution. Further, the *F* test used in some studies to assess differences between

groups is itself highly biased toward giving spuriously significant results (Johnson, 1994).

We recognize that specifying group criteria *ex ante* is difficult, but we feel that it is time to shift from exploratory derivation of groups to a confirmatory mode. Researchers should recognize the value of the multidisciplinary perspective of strategic management in theorizing about strategic groups. For example, theories from IO may provide reasons for expecting heterogeneity. Marketing concepts related to product-market definition, customer needs and wants, choice preference and buyer behaviour may provide insights into the existence or absence of groups. Similarly, literature on organization theory and administrative sciences points out organizational structure, management systems and culture issues that may have close relationships to strategic choices and actions.

In a somewhat different role, population ecology (Hannan and Freeman, 1989) and notions of organizational species (McKelvey, 1978) provide insights to why groups form and the correlates of stability over time. The strategic management challenge is to reconcile these contrasting and somewhat competing viewpoints toward an explicit rationale to support future research, research which could examine both the evidence of groups at a single point and their evolution over time. A related note is the possibility of moving towards confirmatory approaches (including structural equation models) to test *a priori* structure.

Suggestion: Incorporate Managerial Perceptions

Interpretability concerns whether the strategic groups observed make sense to strategists and other interested parties. This can be achieved at two levels: evaluation of the dimensions used to develop groupings by the concerned managers or industry experts, and an assessment of the output, namely the group configuration observed. We do not advocate any particular approach at this stage, as long as some attempt is made to incorporate managerial perceptions. Too often, the research has been characterized by 'far-removed' secondary analysis of the observed groups and by inadequate 'triangulation' and synthesis across different approaches and methods.

Observation 5 There is only weak evidence of performance variations across groups.

A theme complementary to 'descriptive validity' is that of 'predictive validity', namely the use of the

structure of the groups to predict systematically an external criterion, such as performance. Performance is of central concern in strategic management for two reasons. First, if distinct groups show statistically significant variations in performance, the results support the theory that performance variations are attributable to strategy. Second, if performance differences do not exist, and assuming away statistical noise, then this may imply either a rejection of the hypothesis of a structure-performance linkage (following IO) or support the view that alternative 'generic' strategies with equal performance effects are operative.

The latter implication is a serious one and needs to be backed with a clear articulation of the reasons for the observance of equally effective (but different) strategies (i.e. the well-known equifinality principle). If adequate theoretical reasoning cannot be brought to bear in favour of equifinality, the rejection of the performance differences hypothesis implies that attention should be focused not on the group recipe (an 'averageness' notion) but on firm-level 'within group' differences in performance. Hence, we should examine the differential set of skills and assets of the different players. In particular, we should focus on a dominant or a distinctive firm which has accumulated a differentiable, inimitable set of assets and competitive positions that lead to competitive advantage. Prahalad and Hamel (1990) have coined the term 'core competences' to characterize the unique resource bundles owned by different corporate entities which convey sustainable competitive advantage. Indeed, this may lead to greater variation in performance *within* groups than between them (Bogner *et al.*, forthcoming), as long as the distinction between 'competences' and 'assets' is maintained.

Suggestion: Use Multiple Measures of Performance

Within existing research on performance differences, two patterns are evident. One is that a number of studies have indeed observed some differences across groups. Thus some preliminary support for the predictive validity of group structures is available. The other pattern—perhaps a more important one—is that performance is treated in the somewhat narrow terms of profitability as opposed to a broader view including both financial and operational measures. Performance measurement is a perennially thorny issue in strategic management (Venkatraman and Ramanujam,

1986), and it is important that multiple measures of performance be incorporated into strategic group analysis. This seems particularly important in multinational research, given the difficulty of comparing financial data across countries. Further, given that performance is not a unitary concept, the strongest support for the predictive validity of strategic groups will be found only through the use of multiple criteria (e.g. Cool and Schendel, 1987; Dess and Davies, 1984; Fiegenbaum and Thomas, 1990). See also Venkatraman and Ramanujam (1986) for a recent discussion of performance measurement in strategy research.

Taking a broad view of these observations and suggestions, it is evident that the idea of strategic groups is not an end in itself but a potentially useful tool for interpreting and understanding the behaviour of firms. Hence our final suggestion.

Suggestion: Link Strategic Group Research More Closely to Questions of Strategy

Our last and, perhaps, most important suggestion is to use strategic groups to address important strategy research questions (Fiegenbaum, 1987) and frame key issues about competition, competitive advantage, sustainability and flexibility (Ghemawat, 1991). In IO, strategic groups demonstrate the heterogeneous nature of an industry and explain intra-industry variations in performance. In strategic management research, it can offer insights into important questions and issues that *may not otherwise* be forthcoming (Ghazanfar, 1984; Steffens, 1988, 1994). Strategic groups should be a starting point in strategy research, not an end in themselves. It is important to position the identification of strategic groups into a larger strategy issue to which the group configuration makes a significant input.

Possible sets of issues that can be framed within a strategic groups perspective are:

- (a) *Determinants of grouping structure.* It is interesting that very little work has been done to explore the question of the formation of groups and, more importantly, to identify the key determinants for the structure of strategic groups. This issue needs to be addressed in a manner that goes beyond the IO explanation and, as noted earlier, needs to incorporate relevant concepts from disciplines such as marketing, organization theory and population ecology. If strategic groups truly reflect

- both strategic behaviours and strategic choices, then these issues need to be addressed systematically in the context of a strategic theory of the firm (Rumelt, 1984). There also is an obvious linkage between strategic groups and the idea of cognitive communities (Porac *et al.*, 1989; Thomas and Carroll, forthcoming).
- (b) *Stability of grouping structure.* Little is known about the stability of structure (but see Fiegenbaum, 1987). We define stability in two ways. One pertains to stability across variations in the dimensions used to develop the structure of strategic groups. For example, what would happen to the groups if we added or subtracted a strategy variable used for constructing the groups? The other is temporal stability. What determines the stability of groups over time? What external and internal factors (idiosyncratic to the sample frame) might change the structure significantly? What is the relationship between movement of firms across groups and performance changes?
- (c) *Core competence, competitive advantage and sustainability.* Careful analysis of 'within group' variations is essential to identify the strategies of significant 'outlier' firms, especially the dominant firms. Too often strategic group analysis focuses on 'averages' and leads to the regression towards group means (whether statistical averages, norms, or recipes) as indicators of strategic intent at the firm level.
- (d) *Predictive ability of group structure.* Much existing research does not appear highly predictive of the future strategic behaviour or performance of firms of groups. As one anonymous reviewer noted, the ability of the strategic groups concept to explain current and past structure is indeed helpful to researchers, and there is a substantial body of this type of essentially descriptive research. However, we believe that more attention should be devoted to developing more fully the theoretical implications for future behaviour and performance. In so urging, we do not mean to overly simplify its complexity. The continual change in environmental conditions, the evolution of organizational abilities and characteristics, and (perhaps most important for strategy researchers) the unpredictability of human creativity, all constrain the predictive capacity of *any* social science research.

3. Strategic Groups, Competitive Evolution and Industry Dynamics

A major theme of this paper is that strategic groups should be applied to problems of real significance beyond basic classification and taxonomy. For example, strategic group ideas can have a major role in exploring industry dynamics in terms of structure changes, and ensuing changes in competitive conditions, by assessing both prior changes in asset structures and key competences of firms (Mascarenhas, 1989; Mascarenhas and Aaker, 1989). This section gives an overview of two recent strategic groups studies which focus on dynamics.

One study concerns the development of the competitive positions of European firms in the US pharmaceutical market (Bogner and Thomas, 1991). A second discusses the prospective development of the food processing industry in Europe following the development of the European single market (McGee and Segal-Horn, 1990, 1991). An explicit strategic groups approach is used in each case, although the underlying economics of the two industries are fundamentally different. Both use a strategic groups approach to explore issues of industry dynamics.

3.1. The Pharmaceutical Industry

The analysis of the American pharmaceutical market between 1969 and 1988 focuses on external environmental events which disrupted existing patterns of competition. In particular, it looks at the position of European firms in the strategic groups identified, how those competitive positions changed over time, and explains variations in firms' strategies based on differences in their accumulated asset structures. The strategic groups were defined in terms of (i) the scope and breadth of market posture (including product market scope, new drugs introduced and relative measures of new product development); and (ii) the nature of R&D (including short term and longer term measures of R&D spending and concentration of R&D by research classes).

A historical analysis of the industry identified four periods of stability with three intervening breaks. A grouping analysis for each stable period revealed four distinct strategic groups. A statistical analysis of each break identified which of the grouping variables 'caused' the breaks in each of the four stable periods. Different variables (i.e.

assets) can be seen to dominate the ensuing stable periods following a break in the established order. The analysis then shows how European firms moved across the groups as their US strategies evolved and as they became better able to deploy their European-based assets in the US market. European firms are pursuing diverse global strategies, ones which reflect firms' underlying asset stocks and key competences. The latter stable periods show how merger and acquisition help firms of modest size and strength to develop the size necessary to compete with the largest firms. Bogner and Thomas (1991) comment in conclusion:

'First, firms enter and improve competitive position in the market in an established sequence (of moves through strategic groups). Second, firms' upward movement through strategic space is limited by the scope and strategic asset structure of the multi-national parent.'

3.2. The Food Processing Industry

The study of the European food processing industry was concerned basically with the possible emergence of a pan-European food industry from the existing mosaic of separate nationally focused industries—in other words, a transnational emerging from a multidomestic structure. This possibility was rooted in the Single European Act in 1987 (expected to reduce the costs of access to separate European markets), and the expectations of increasing homogeneity of consumers across Europe as an external trigger for structural change.

A model of 'strategic space' was developed to map the prospective movements of firms. A historical overview identified periods of stability and the conditions causing breaks between periods. On the basis of this history, key variables for strategic group identification were identified. These were market scope (territories covered), marketing intensity and brand strength, manufacturing focus and R&D intensity (the latter two were not statistically validated). These were used to identify an industry configuration in 1990 of at least four distinct groupings.

However, the real strength of the configuration lay in the specification of the mobility barriers between the groups. The strategic space idea is the converse of the strategic group—i.e. why is there no group present in a particular location on the n-dimensional map? The first possible answer is that

some spaces are currently infeasible and the asset structures implied by that space are competitively dominated by other asset structures.

The second possible answer is similar but distinguished by a difference in perception (we thank a reviewer for pointing out the basis of the difference). Some spaces may have never been entered because the construction of the implied assets was not thought to be competitively viable. This second insight allowed the analysis of certain empty spaces to suggest that certain assets technically could be constructed (e.g. European marketing systems and brands) and that changing market conditions might yield a payoff for those new asset structures.

The strategic groups/space analysis juxtaposed a changing European market situation with a lowering of mobility barriers between existing groups and the empty spaces. The conclusion drawn is that certain kinds of new asset structures of firms are very likely to be constructed and that these will fall into two or three key new groups. The processes by which this might happen can be identified, including a wave of mergers and acquisitions. The consequences for competition both in the transition period and for a subsequent stable period can be analysed, although the time period for the transition cannot be identified. The analysis is distinctive in that it is almost entirely prospective in character, laying out a methodology for analysing future change in the industry. The authors conclude:

'First, two major new strategies are ... likely to emerge, the pan-European own label supplier and the pan-European brander. Second, the strategic space analysis tells us something about the pathways to achieving these positions. Third, it also tells us something about the nature of competition both en route and in the new structure. This approach does not tell us how long the process of change will take, nor does it say who will be the winners and the losers. It does, however, say a great deal about the characteristics of the winners and losers.' (McGee and Segal-Horn, 1991)

3.3. Common Features

There are a number of common features in these two studies which, we argue, can be extended to other studies of dynamics. The *first* is the interpretation of industry history in terms of periods of relative stability punctuated by external disturbances or triggers which cause realignments and restructuring. Eventually there is a transition

into another stable period in which firms compete within well-understood rules and assumptions. Stable periods reveal stable strategies and, therefore, stable groups (Fiegenbaum and Thomas, 1990; Ghazanfar, 1984; Ghazanfar *et al.*, 1987).

This theme of stability punctuated by change is not unique to strategic groups research. It can be seen in such literature as the technology literature on dominant designs (e.g. Anderson and Tushman, 1990; Lee *et al.*, 1994a, 1994b; Tushman and Anderson, 1986).

That literature illustrates the common (but not universal) pattern of a stream of incremental technological changes interrupted by a significant technological disruption or advancement, which then becomes the basis for another period of incremental change. Given that both strategic groups researchers and technology researchers have noted this pattern of relative stability punctuated by change, an interesting future research opportunity would be to explore the commonalities and differences of the two perspectives, with particular regard to the underlying factors driving change and the implications for industry incumbents.

The *second* commonality is the use of the experience and data of these stable periods to identify strategic group dimensions, in contrast to the *ad hoc* theorizing from first principles which has marked much previous work. The pharmaceutical study was particularly explicit in using statistical procedures on objective data, while the food study relied more on a synthesis of a wide range of industry material and experience.

The *third* feature is the careful definition of strategic groups dimensions according to asset and resource characteristics (Lippman and Rumelt, 1982; Rumelt, 1984). The essence of groups is the use of asset 'inputs' rather than 'output' variables like performance. Thus, variables of direct interest include product and market scope variables, research intensity and economies of scope.

Fourth, the dimensions are validated against a longer run historical perspective to assess how change is rooted in long-term accretion of tangible and intangible assets and in notions of asset complementarity. This is an explicitly theoretical check on data-driven variables to avoid error due to mis-specification of the time frames of recent history (Teece, 1988).

Fifth, the analysis allows the emergence of multiple groups showing very diverse strategic

approaches. This confirms the utility of a strategic group approach in 'fuzzy' industry settings. With this approach the boundaries are set by the strategies themselves. The interaction within and between groups can then be analysed in terms of the alternative applications of their asset sets in the marketplace. Mobility barriers can be explicitly defined (as long as the dimensions have been identified correctly, see the third and fourth common features). Thus, the asset investments required for change can be directly identified. The pharmaceutical study shows this *ex post*, and the food study *ex ante*, but the procedure is identical.

Sixth, mobility analysis becomes possible. The pharmaceutical study tracks the shifts across groups by European firms as they build up strength to compete in the US market. The food study uses the idea of feasible strategic space to show areas where new groups can develop given the external triggers for change. Both show the role of mergers and acquisitions—pharmaceuticals in retrospect (with payoffs yet to come), food in seeing them as a key to restructuring asset sets. The difference in the two studies here lies in the evolutionary nature of the pharmaceuticals industry, compared to the possible revolutionary changes taking place in the food industry.

A *seventh* similarity is acknowledgement of the global context. Pharmaceuticals show the evolution of European firms in the US but the backdrop is the global industry. The food study looks at Europe but acknowledges the importance of the changing global context. In other words, a strategic groups approach does not necessarily require a full specification of the complete model in order to analyse the phenomena of interest, as long as interactions between the partial and the full model can be captured in the understanding of how asset structures operate in the market. In order to fully defend this proposition, we acknowledge that both studies need to provide a rather fuller description of the global context.

The payoff to both studies is:

- (i) a richer interpretation of current market structures and the interaction of asset structures and key competences with the conduct of intra-industry competition;
- (ii) a framework for analysing change which is replicable both over time and across industries; and

- (iii) a language for interpreting change in terms of changes in asset structures of firms (i.e. their strategies) and the ensuing effects on competition. In this approach change is analysed in terms of the inputs (assets) which lead eventually to outputs (nature of competition). This is a substantial change from the *ad hoc* reporting of changes in competitive conditions.

4. Summary and Conclusions

Strategic groups pose a number of interesting research challenges. The first and most obvious is the contribution to the market structure-performance debate. Of more promise are other areas: the existence and evolution of group structures and their relationship to firms' asset investments and the evolution of industries, their contribution to entry theory in terms of the queue of potential entrants and the alternative entry paths, rivalry patterns in oligopolistic markets, and our understanding of the growth and evolutionary patterns of firms and industries, particularly in increasingly global markets.

The emergence of the strategic groups concept and the increasing attention to the overlap between industrial organization, strategic marketing, administrative behaviour and strategic management suggests closer attention to the firm as the unit of analysis (Rumelt, 1984; Seth and Thomas, 1994) and a thorough re-examination of Penrose's (1959) theoretical framework of the firm as a collection of resources (for a linking of strategic group research with the resource-based view of the firm, see Bogner *et al.*, 1993). It is difficult to apply rigorous research techniques in the area of strategic decision making. The problems of controlling for exogenous variables, the lack of comparability among the units of analysis, and the changing nature of firms' opportunity sets and environments limits researchers' ability to make causal connections between sets of variables. All these problems are compounded by the lack of suitable data bases for research. There may well be a continuing trend towards in-depth studies of firms and their industry settings in an attempt to apply control procedures to fewer variables and to explore the character and texture of strategic choices in ways impossible for statistical analysis to achieve. The effect of strategic groups is to provide a broader focus than the microeconomic 'firm vs. the industry' perspective,

and a tighter focus than the industrial organization view. Firms do not exist in isolation; they also clearly are concerned with and influenced most directly by a relatively small set of competitors. Centring research attention on a firm's most highly relevant competitive conditions (its group membership and dynamics) and aiming research in some of the directions we have suggested seems a particularly fruitful way to advance strategy research.

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