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Flexible Specialization and the Garment Industry

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This paper takes issue with accounts that argue that flexible specialization is the appropriate industrial paradigm for the high-end, fashion segment of the apparel industry. Many accounts have argued that apparel factories using mass-production face three obstacles in this segment of the industry: they cannot produce goods quickly enough, they cannot change styles fast enough, and they cannot meet quality standards. Evidence from two case studies and a review of the industry press reveals that large firms in the 1990s have been able to meet these challenges using mass production methods. Quality challenges have been met by the implementation of hyper-Taylorist labor practices such as "statistical process control."

Key Words: flexible specialization, garments, mass production, Taylorism.

Introduction

Sociologists have long struggled with the question of how work is changing. Is it becoming more humanized and fulfilling, drawing on and developing the skills and capacities of workers? Or is it becoming more mindless and routine, fragmented in such a way as to draw on only the most rudimentary abilities? Sometimes these questions are posed in more nuanced ways, asking how changes in work are distributed across diverse sectors of the economy or within an increasingly globalized division of labor.

One set of answers to these questions has argued that, even in mass production economies, there are windows of opportunity for skilled, autonomous work. In specialized niches where mass production is inefficient, firms organized according to very different principles can

flourish. As one of the most fragmented and least concentrated sectors of the U.S. economy, it is not surprising that the apparel industry has frequently served as a case study for such debates. As a "mass production industry without mass production methods" (Green, 1997: 4), the industry's small shops have formed the terrain of an intense debate over whether craft principles can prevail in an industrial age.

The account that follows reviews arguments that have linked the apparel industry — or segments of it — to an industrial paradigm of "flexible specialization." It presents evidence that, while such an association may have been demonstrable in the 1980s, the 1990s saw the rise of competitive conditions that favored large firms. Flexible specialization theorists had argued that there were three specific problems that prevented large firms using mass production methods from entering the "high-end," fashion segment of the industry: market fragmentation, the need to respond rapidly to shifts in demand, and high consumer standards for quality. The evidence presented here suggests that, by the late 1990s, large corporate apparel producers and branded marketers of apparel had found ways to resolve each of these dilemmas without abandoning mass production methods. These firms were able to meet the demand for the high-end, rapidly changing fashion goods that flexible specialization theorists had argued would be met by smaller firms using more craft-like production regimens.

Examining how large firms have achieved dominance in the niches of the apparel industry formerly controlled by small firms reveals two fundamental problems in flexible specialization theory. In focusing on the role of consumer demand in creating niches which cannot be satisfied by mass production, the theory ignores the tight integration of marketing and production in contemporary firms. In particular, it ignores the ways that sophisticated marketing strategies allow firms to create desire for the types of goods they can produce (at the pace they can produce them). Consumer desire does not, in and of itself, drive firms to meet demand. Rather, it is aroused by the new possibilities offered by firms as they employ new technologies and sourcing strategies to produce more varied goods more rapidly. It is often the largest firms that control the new technologies and sourcing strategies necessary to offer a wide array of constantly changing products under a variety of labels and brands.

Of equal importance, this case suggests that the attempt to define flexible specialization as a new paradigm has not been sufficiently attentive to the ways in which business cycles, product cycles and

other aspects of economic context shape opportunities for different kinds of firms. While there were niches for small, flexibly organized firms in the early stages of the "quick response" movement in the apparel industry, large firms found ways to emulate those practices, and they had the financial resources to establish them on a global scale, thus lowering their costs. As Harrison has noted more generally, flexibility and decentralization are not necessarily incompatible with large size of enterprise. Rather, in many cases only large firms command the financial resources to invest in research and technology, and best practice management, as well as to ride out business cycles (1994: xiv). Large firm dominance is not inevitable, but large firms have important resources that allow them to establish global production networks, and to market aggressively. The apparel industry has always been structured by a tension between flexibility and standardization, as firms struggle to produce new goods and novel styles and then to disseminate them to a mass market (Green, 1997: 15). Large firms have the advantage in those moments when innovations are standardized and purveyed to an expanded market.

The analysis that follows is based on two types of data. The first is a comprehensive review of the apparel trade press and of articles on apparel in the economic press during the 1990s. In addition, the author conducted case study research with two apparel firms in 1999–2000,[1] one producing low-end, "commodity" apparel, and the other producing a broad range of apparel — from "moderate" to "designer-bridge" lines.

The first firm, Tultex Corporation, was headquartered in southern Virginia. The firm was started in the 1930s, and was family-run until the 1980s. It had $650 million in sales in 1998, placing it among the top 30 U.S. apparel producers. It combined direct production with subcontracting, and most of its offshore production was concentrated in Mexico and Jamaica. Tultex declared bankruptcy in December of 1999. The second case study firm, Liz Claiborne, Inc., is headquartered in

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North Bergen, New Jersey. The firm was started by designer Liz Claiborne and her husband in 1975. It had $2.2 billion in annual sales in 1999, making it the third largest apparel firm in the U.S. Liz Claiborne produces none of its clothing directly, subcontracting production through a network of 262 factories in 32 countries. Interviews with corporate officials and managers at both of these firms were supplemented by a review of financial and human resource documents, and by visits to production facilities. This included factories operated by Tultex in Martinsville, Virginia, as well as visits to plants producing for the respective companies in Aguascalientes, Mexico.

The Garment Industry in Debates over Flexible Specialization

> The garment industry was an example of flexible specialization before the term was coined, and of informal economy before the notion was repatriated from the Third World
>
> —Green, 1997: 4.

The last two decades of the twentieth century saw a concerted effort on the part of scholars in several disciplines to define the industrial paradigm that was succeeding Fordist mass production. The problem of what a post-Fordist economy would look like, and how it would be regulated, occupied a central place on the intellectual agenda of sociologists, geographers and radical economists. Perhaps the most well-developed contender for an emergent alternative paradigm was "flexible specialization."

Michael Piore began to lay the groundwork for the concept of flexible specialization in an article published in 1980 and Charles Sabel further developed the concept in *Work and Politics* in 1982, although neither used the term until publication of their joint work, *The Second Industrial Divide*, in 1984. Sabel has defined the concept in two ways. The first definition calls it the logical "inverse of mass production: the manufacture of specialized goods by means of general purpose resources." The second definition calls flexible specialization a system in which "firms know that they do not know precisely what they will have to produce, and further that they must count on the collaboration of workers and subcontractors in meeting the market's eventual demand" (Sabel, 1994: 139).

According to Piore and Sabel, firms operating in a context of uncertain demand produce specialized goods using craft-like production rather than seeking economies of scale. They rely on a work process that uses general purpose machinery, reintegrates design and execution, and erodes the distinctions between blue and white collar work. Flexible firms encourage workers to develop and use a wide array of skills and allow them to participate in design activities and various forms of decision-making surrounding the production process.

The firms that Piore and Sabel view as examples of flexible specialization are often small, highly specialized companies operating within dense networks of collaborative relationships. They point to the industrial districts of northern Italy and the Silicon Valley as prototypical examples of regions where community institutions have provided support to small firms and where synergistic effects have been observed. Alternatively, the authors note that large firms can also reorganize their operations in order to gain flexibility. This may involve a movement away from vertically organized operations — in which the firm owned all parts of the supply chain — and toward the establishment of long-term contractual relationships with suppliers of inputs and services. The authors argue that this kind of outsourcing allows firms at each node of the chain more opportunities to innovate, and to reintegrate research and development with production (Piore and Sabel, 1984; Helper *et al.*, 1999).

Part of the appeal of the flexible specialization paradigm has been the fact that it appears to open a path to the humanization of labor relations within capitalist economy, a path that leads away from the deskilling and routinization of work in the twentieth century described by Blauner (1964), Braverman (1974) and others. It evokes an alternative model of craft workshops where workers use the full range of their capacities and knowledge, where their decision-making is respected and relatively unhindered, and where a form of industrial democracy is achieved through close collaboration between workers and management (Piore and Sabel, 1984: 115). Proudhonian, rather than Marxist, in its analysis of the sources of alienation, Piore and Sabel's work proposes solutions that seem achievable within our current array of economic institutions. It is primarily this vision which has challenged and intrigued the multitude of scholars who have entered into the flexible specialization debates.

Clothing manufacture has been at the heart of these debates. Apparel is a highly competitive industry which historically has been

characterized by low measures of concentration and centralization. In other words, it is made up primarily of small firms with high turnover rates (Dicken, 1998: 305; Dickerson, 1995: 289; Ghadar, 1987: 4). Researchers have cited low costs of entry, fluctuating demand, and frequent style changes as features conducive to a small scale of enterprise. In *The Second Industrial Divide*, Piore and Sabel use the women's garment industry as one of their examples of the craft model of production. They cite the collaborative character of the work, a sense of community, the opportunity for workers to move into supervisory and ownership positions, and practices of cooperation between labor and management unthinkable in other branches of American mass production (1984: 118–119). They argue that such conditions are necessary because frequent changes in fashion require constant, creative redeployment of skills and materials. In a similar vein, Zeitlin and Totterdill have argued that "the clothing industry has never been a classic site for mass production.... A relatively open and fragmented industrial structure has therefore persisted even in the United States, where the adaptation of mass production methods to garment manufacture has progressed furthest (1986: 156)." Green claims that while the garment industry's fragmentation and informality led prior generations of researchers to consider it an atavistic throwback to early industrialization, in the 1980s and 1990s flexible specialization theorists recast it as a "proud rebel from the mass production model and as one of the harbingers of the new second industrial revolution" (1997: 4).

Piore and Sabel argue that the industrial structure of western economies has always encompassed variability. Competitive forces have favored mass production through most of the twentieth century, yet flexible firms have survived in highly specific niches. One of these niches was the manufacture of the special purpose machinery that is required for mass production, which cannot itself be mass produced. The other was in filling unstable or fluctuating demand for a product. Stable demand is demand at the bottom of the business cycle, and this portion is filled by large firms relying on mass production. This allows factories with high fixed costs to continuously operate at full capacity. Unstable demand is the difference between actual demand and the stable portion, and is filled by a secondary sector of flexible firms using less refined and less product-specific techniques (Piore, 1980: 31; Piore and Sabel, 1984: 27; Sabel, 1982: 35).

In the case of clothing, researchers frequently adapt this argument to the highly differentiated market for clothing, and particularly to the

distinction between basic or "commodity" apparel and fashionable high-end goods. Many argue that the production of standardized garments is best accomplished by mass production, but that more expensive, fashionable and higher quality clothing will continue to be produced in small, flexibly organized shops. Waldinger, for example, in his account of the New York City apparel industry, relies on this distinction to explain the persistence of small firms. "The large apparel company," he notes, "while well-suited for making staple goods, is too cumbersome an entity to respond to sudden and unanticipated fluctuations. Hence, problems arise when consumers' tastes shift unpredictably or when overall needs change. Because apparel is a product very much subject to the vagaries of fashion change and the volatility of consumer spending, there is a role for a spot market that specializes in making up fashion items and overruns on more standardized goods and for the small facilities that are best suited to producing small quantities of short-lived fashions" (1986: 189).

Zeitlin and Totterdill have pushed this argument further by claiming that competitive conditions in the apparel industry since the 1980s have grown more favorable to small, flexibly organized firms, giving them an edge over large producers of all but the most basic items. They argue that a more fragmented mass market for apparel, demanding a more diverse array of specialized products, began to emerge in the 1980s. This new competitive environment forced manufacturers to produce a wider range of styles and to switch production between them rapidly. Competition became driven by the need to respond rapidly to market shifts rather than by price. These conditions led to, and benefitted from, an array of new practices facilitating communication between manufacturers and retailers, including bar coding, electronic point-of-sale data on consumer purchases, and electronic data interchange. Taken together, these innovations permitted the quick response approach to manufacturing that became a "best practice" for the apparel industry in the 1990s.

Echoing Piore and Sabel's arguments about the connections between flexible specialization, craft work and shop floor autonomy, Zeitlin and Totterdill have argued that the decline of scale economies and the advent of quick response manufacturing has forced a restructuring of the shop floor. "As production runs became shorter and style changes more frequent... even the larger firms have been forced to encourage their machinists to become proficient at a wider range of sewing operations to avoid costly bottlenecks and line imbalances.

Broader initial training and continuous retraining, and higher basic wages for more versatile operatives... are being used by larger clothing companies in their efforts to shorten the learning curve and reduce the cost penalty associated with frequent style changes" (1989: 176).

According to this view, these new competitive conditions force larger firms to adopt more flexible labor practices, and they create openings for small firms producing for niche markets. They also reduce the importance of clothing *imports* from developing countries, where "lead times are too long, minimum production runs too large, and quality control too difficult" (1989: 167). One of the reasons that theories of flexible specialization in the garment industry have been appealing to researchers in the U.S. and western Europe is the hope that they hold out for continued apparel production in the industrialized countries. In an era where large firms are moving operations offshore to take advantage of cheap labor, flexible specialization theorists have argued that there will always be a role for U.S.-based "small facilities... producing small quantities of short-lived fashions" (Waldinger, 1986: 189). In fact, a broad range of researchers have claimed that while basic goods may move offshore, high-end fashion goods will continue to be produced in the small shops of New York and Los Angeles (Bonacich and Appelbaum, 2000: 71).

Articles in the trade press of the late 1980s and early 1990s appeared to confirm the arguments of flexible specialization theorists. They revealed that many small firms in the fashion segment of the U.S. apparel sector were actively embracing flexible production and saw this as an alternative to moving operations out of the country (which was a strategy beyond their means in most cases). These firms emphasized reliance on local networks of suppliers, rapid response times and high quality. A 1994 article in *Women's Wear Daily* quoted retailers as saying that hands-on quality control, quick response capabilities, and the ability to produce small production runs kept them committed to buying from small firms. In the same article, CEOs of small firms gave the following reasons for continuing to produce domestically.

"By maintaining all elements of production in the same area, there is little room for error. Quality control is the greatest advantage. Everything is within four blocks of my office. It makes it easy to check on how things are being done....

In addition to better quality control and faster turn time, domestic production is an advantage because retailers are buying closer to season." (Feitelberg *et al.*, 1994: 8–10).

By the end of the 1990s, however, such strategies were disappearing. U.S. apparel jobs dropped to an all-time low of 663,000 in October 1999 (Maxwell, 1999: 15) from a peak of 1.4 million in 1973 (U.S. Department of Labor, 1994: 253). Offshore production had become a competitive imperative. The advent of the North American Free Trade Agreement had made Mexico an especially attractive alternative. And information processing and communications technologies were enabling firms to respond quickly to changing demand as well as to effectively manage supply chains over long distances. Companies with long-standing commitments to domestic production (like Levi-Strauss & Co.) closed their U.S. factory doors in the late 1990s and established subcontracting arrangements offshore.

As the dust began to clear from the southward rush, it was apparent that the firms operating offshore were not necessarily those producing basic or "commodity" apparel. Gereffi had defied conventional wisdom when he noted, in 1994, that firms in the fashion segment of the industry were the most committed to global sourcing due to the labor intensity of their production (1994: 96). In the late 1990s, the firms with the strongest global sourcing networks were those furnishing products near the top of the fashion hierarchy, such as Guess, Liz Claiborne, and the Gap. Gereffi called these firms "branded marketers" or what the business literature has referred to as "hollow firms." This means that they do not operate factories of their own, but "rely on complex tiered networks of contractors that perform almost all their specialized tasks" (1994: 99). These firms produced apparel which fell into the categories "moderate," "better," and "designer bridge." They were companies whose competitiveness required rapid style change and high quality products. How were the large, branded marketers achieving quick response and state-of-the-art quality through global sourcing? How do we explain their ability to dominate that segment of the market that is most volatile? The sections that follow will argue that response to rapid market change and the demand for high quality production have been achieved through: (1) branded marketing strategies, (2) new communications technologies, and (3) new forms of labor control. Each of these strategies requires substantial investments — investments that, to date, have only been within the reach of the largest apparel firms.

Concentration in the Apparel Industry in the 1990s: Mergers, Virtual Mergers and the Competitive Advantage of Size

> The big tend to dance with the big.
>
> —Dickerson, 1995: 299

In most of what is written about the garment industry, researchers present the market as fragmented into two distinct sectors: commodity and fashion, with each requiring its own type of production process. Green has offered a more subtle account of the industry's dynamics by arguing that the two segments are actually linked by a dialectic of imitation and differentiation. She quotes Simmel on this issue: "the more an article becomes subject to rapid changes of fashion, the greater the demand for *cheap* products of its kind" (Simmel, 1904/1957: 556, cited in Green, 1997: 29). As each new style is introduced, the problem becomes how to simplify and standardize it for dissemination to a broader market. The fashion industry is torn between art and industry as it markets individuality to the masses. The manufacturer must find a place within these dialectical tensions, caught between "the Scylla of standardized production and the Charybdis of flexible demand" (Green, 1997: 150). Small flexible firms that find an initial foothold in the market based upon their ability to innovate soon find themselves pressed to increase market share.

In the 1980s, the U.S. economy saw a massive 25% per annum increase in mergers across a wide range of sectors (Amin and Malmberg, 1994: 234) and this trend continued through the economic growth of the 1990s (*Economist*, 1998). While the apparel industry was slow to begin participating in this trend, the 1990s saw the rise of the apparel corporate giant (*Women's Wear Daily*, 1999: 10). A major trade journal noted in 1998 that "a handful of powerful retailers and manufacturers continue to grow, often fueling each other's expansion, while smaller players find themselves at ever greater risk" (Edelson and D'Innocenzio, 1998: 14). Firms sought mergers, acquired smaller firms, shifted to vertical operations, adopted stronger marketing orientations and reduced response time. In 1999 alone, the corporate giant Liz Claiborne acquired or completed licensing agreements with six other firms, including well-known design houses such as Kenneth Cole, Donna Karan and Segrets.

In addition to growth through acquisitions and mergers, firms within the apparel industry expanded their clout through "virtual mergers" (Ryan, 1999: 18–21) or new forms of collaboration within a given supply channel or commodity chain. A supply channel is made up of all the firms and relationships required to get a product to market. In apparel, this includes yarn spinning, textile production, manufacture of other necessary materials (such as buttons and zippers); apparel design, cutting and sewing; distribution to a retailer, sale to customer and any service that follows the sale (Abernathy *et al.*, 1999: 2). In the 1990s, new forms of electronic data exchange allowed firms within a supply channel to be linked together through standardized data transmission. Customer purchasing could then "pull" merchandise through the channel in response to demand. This resulted in a *de facto* vertical integration of cooperating firms without any changes in legal status. The large retailers and branded manufacturers that controlled the channel could thus enjoy the advantages of coordinated production without the risks of direct ownership. Belussi has referred to this phenomenon as the emergence of "concentrate regimes" which she believes represent new forms of oligopolistic power concealed with a structure of apparently independent firms (1992: 78).

These kind of contracting relationships make it difficult to obtain accurate data on concentration in the apparel industry, particularly when the contracts are international. Census data on U.S. manufacturing establishments show a tendency toward greater concentration in key segments of the industry, although these data alone would suggest that the industry remains quite fragmented (see Table 1). But these data underestimate concentration for three reasons. First, the factories counted by the census are frequently not producing goods on their own account, but under contract to large branded marketers or retailers. Second, the large branded marketers such are not counted as manufacturing establishments if they subcontract production. And third, there are no reliable data on the offshore production of apparel that is marketed by U.S. firms. Despite these difficulties, industry analysts and academics alike pointed to growing concentration in the 1990s. Appelbaum and Gereffi have argued that "concentration has become a fact of life in the once-fragmented U.S. apparel industry" (1994: 47). These authors quote a spokesperson for Kurt Salmon Associates, a leading consulting firm in the apparel industry, who noted that "a disproportionate amount of the profits needed to reinvest in the industry lies in the hands of only a few companies."

Table 1 Concentration in key sectors of apparel manufacturing: 1963, 1977, 1992.

Industry	Percent of sales accounted for by firms			
	4 largest	8 largest	20 largest	50 largest
Women's dresses				
1963	6	9	14	23
1977	8	12	19	28
1992	11	17	30	45
Men's & Boy's clothing				
1963	13	19	32	51
1977	12	22	38	59
1992	18	29	49	70

Source: U.S. Census Bureau, Census of Manufactures, Concentration Ratios in Manufacturing.

Other analysts have noted that the parameters of how big a company needs to be to survive have been increasing. One editor of a trade journal estimated that while a company doing $100 million of annual business was large enough to survive in the early 1990s, by 1999 only companies operating at the $2 billion mark were secure and thriving (Conrad, 1999).

Helper *et al.* (1999) have argued that supply chain integration is often a way to enhance flexibility. They describe forms of integration in which collaboration is central and in which firms move away from hierarchy and centralization and toward participative learning among parties. They emphasize that for such arrangements to represent a viable alternative to mass production, the decisions of higher-level entities must be shaped by constituent units, and routines must be accessible to deliberative evaluation. The team or work group will form the "basal unit" of such firms. Goal-setting, engineering, monitoring, and information exchange will be characteristic of each node of the chain. While such collaborative forms of supply chain integration have been characteristic of some sectors (Rickert *et al.*, 1999), they have not been prevalent in the apparel industry. Apparel supply chains are what Gereffi has called "buyer driven" (1994). In buyer-driven chains, large retailers, branded marketers and trading companies play the pivotal role in setting up production networks and as "lead firms," they tend to dictate practices along the chain.

Branded marketers of high-end, fashion apparel have been able to carve out the most lucrative activities within a global supply channel

for themselves, while farming out other activities through networks of subcontracting. As Appelbaum and Gereffi have observed, profits in buyer-driven commodity chains derive "from unique combinations of high-value research, design, sales, marketing and financial services" (1994: 44). Firms like Tommy Hilfiger and Liz Claiborne are design- and marketing-intensive and have invested significant resources in establishing, selling and marketing a brand. Rabach and Kim have argued that the highest barriers to entry in the apparel industry are now "in the downstream marketing and upstream product conception and design segments of the chain" where telecommunications networks, software and innovation are crucial. Branded marketers concentrate on these segments, while externalizing less profitable, and riskier, manufacturing activities through subcontracting networks (1994: 136). Firms such as Reebok and Nike in footwear, or the Gap in apparel, have immense bargaining power, knowledge of markets, many retail outlets and the ability to afford to take risks in order to sustain competitive advantage. They have tenaciously held on to product conception, design and marketing — the highest value-added activities — while subcontracting production.[2] Firms that were able to grow in this way demonstrated strong financial performance in the 1990s.

At the other end of the spectrum, producers of low-end or "commodity" apparel face pressures generated by new forms of concentration in the retail sector. The growth of mega-retailers, such as Wal-Mart, Kmart and Target in the 1980s and 1990s, has put increasing control over the supply of merchandise into fewer and fewer hands. Table 2 presents data on concentration in the retail sector, providing overall measures for department stores, mass merchandisers and specialty apparel stores.

While these data represent overall sales for each type of establishment, apparel industry analysts have developed a more refined measure

[2] Korzeniewicz (1994: 252) has made similar points about the athletic footwear industry. He notes that "in the U.S., Nike has developed as a design, distribution and marketing enterprise." The firm retains control "over highly profitable nodes in the athletic footwear commodity chain, while avoiding the rigidity and pressures that characterize the more competitive nodes of the chain. 'We don't know the first thing about manufacturing' says Neal Luridson, Nike's vice-president for Asia-Pacific. 'We are marketers and designers.' "

Table 2 Concentration in the retail sector: 1992, 1997.

Industry	Percent sales accounted for by firms			
	4 largest	8 largest	20 largest	50 largest
Department stores				
1992	55.9	78.3	93.6	99.4
1997	62.1	84.2	95.9	99.8
Discount & Mass merchandising				
1992	78.7	87.9	97.9	99.8
1997	87.9	94.9	99.6	100
National chains				
1992	100	100	100	100
1997	100	100	100	100
Clothing stores (all)				
1992	17.9	27.9	41.3	52.4
1997	25.5	34.3	46.6	59.2
Women's clothing stores				
1992	27.6	35.4	48.3	59.8
1997	27.2	36.9	51.9	64.5
Family clothing stores				
1992	35.3	52.3	66.8	76.6
1997	43.3	56.5	70.9	83.8

Source: U.S. Census Bureau, Economic Census. Retail Trade. Table 6: Concentration by Largest Firms, 1992, 1997.

that accounts for apparel sales across different types of outlets. Based on these data, *Apparel Industry Magazine* reported that, in 1990, 20 firms controlled 38% of the apparel market. By 1998, the share of those retailers had increased to 47%. Among department stores, in 1999, the six largest companies captured nine out of every ten consumer dollars spent (Edelson and D'Innocenzio, 1999: 14; *Apparel Industry Magazine*, 1999).

Concentration in the retail sector has led to a situation in which manufacturers of basic apparel have little choice but to comply with the price requirements and logistical demands of big retailers. Industry analysts accuse retailers of holding manufacturers "feet to the fire, forcing them to supply their goods on whatever terms or production schedules the retailers demand." Suppliers are "lured into increasing the concentration and volume of their sales to one or several large retailers, who then make them virtual captives." They must meet the

price needs of the retailer or lose that business (Hirshfield, 1998: 1). The big retailers have also required their manufacturing partners to use specific methods of electronic data interchange and distribution systems. Adoption of these practices has become the cost of entry for manufacturers who work with major retailers, and the costs are not shared among parties (Abernathy *et al.*, 1999: 84). Pressures to implement expensive new inventory control and distribution practices, and to expand production offshore to take advantage of cheap labor, challenged producers of basic apparel in the 1990s. Many retailers cut their ties with smaller suppliers in favor of a few big players who could handle large orders and offer volume discounts (Medina, 1999). A raft of bankruptcies among producers of basic apparel in the late 1990s testified to difficult operating conditions,[3] as only firms that were able to successfully make the required investments survived. As Bonacich and Appelbaum have noted, "concentration among retailers seems likely to lead to concentration among manufacturers (2000: 90).

Thus, while the apparel industry historically has been characterized by its ease of entry and the ability to operate on a relatively thin capital base, this situation changed markedly in the 1990s for firms operating at both ends of the market. As one analyst noted, firms needed to create brand recognition, and this is expensive. They needed to do good market analysis, to meet the challenge of filling orders precisely and on time, and perhaps to diversify into non-apparel. All these innovations required greater capitalization than ever before (Hirshfield, 1998: 3). To succeed, firms found it necessary to spend considerable sums on product development, advertising and computerized networks. In addition, global sourcing strategies require a certain minimum size of operations (Massey, 1995: 158, 164). Bonacich and Appelbaum suggest that nine out of ten apparel firms in Los Angeles are too small to afford the costs of shifting production overseas. They suggest that companies with annual sales under $40 million would have difficulty relocating (2000: 70). While in 1986, Waldinger could warn that the market for style-oriented goods was a terrain "too costly and too risky" for large firms (pp. 96–97), it was clear by the turn of the century that highly capitalized firms had found ways to occupy and dominate

[3] Starter, Pluma, Fruit of the Loom, Tultex, Oneita, Umbro, Brazos Sportswear, and Stone Manufacturing, among others.

that branch of production. It is to the strategies that made their successes possible that we now turn.

The Industrialization of Haute Couture

> We have kept the same strategy all along — to put fashion on an industrial level.
>
> —Luciano Benetton[4]

Flexible specialization theorists identified three primary obstacles to the participation of big firms — and particularly big firms using off-shore production facilities — in the fashion segment of the apparel market. These were: the difficulties of meeting the specialized demands of a highly fragmented market (which we will call *the market fragmentation problem*), the difficulties involved in responding rapidly to market changes (*the quick response problem*), and the challenge of producing goods to the quality standards required by the top-end of the market (*the quality problem*). Large firms have been able to effectively respond to these challenges through a combination of marketing, technological innovation and new forms of labor control.

The Market Fragmentation Problem

Zeitlin and Totterdill have summarized the market situation faced by firms in the apparel industry in the following way. Since the early 1980s

> changes in consumer tastes and the demographic structure of the population, the volatility of demand... and the industry's own efforts at product differentiation have together fragmented the mass market in the advanced countries and eroded the advantages of long-run garment manufacture. While price remains important, particularly at the lower end of the market, the struggle for competitive advantage has come to center increasingly on retailers' and manufacturers' efforts to target specific groups of customers defined in new ways; to seduce customers

[4] Cited in Labick (1983: 192).

with attractive, fashionable garments and to respond rapidly to short term trends in the sale of individual product lines (1989: 162).

Zeitlin and Totterdill attribute these trends to consumer demand becoming more discerning (as baby boomers age), to the rise of casual and "lifestyle" dressing, and to the growing sensitivity to fashion in formerly "basic" segments of the market, such as menswear and children's wear. Market fragmentation has led retailers to target narrowly defined segments of the market with choices that allow the shopper to construct a "customized" wardrobe (1989: 162). Other analysts have concurred, pointing out that while consumers in the 1940s were thrilled by the prospect of buying a men's suit with two pairs of pants, "contemporary customers want and expect a huge range of choices, and the consumer's desire for limitless variety has kept the American apparel industry alive" (Abernathy *et al.*, 1999: 1–2). "The market for mass produced clothing has reached its limits," according to Waldinger.

> The aging of the baby boom cohort and the proliferation of two-earner families has shifted clothing expenditure to higher priced, more fashion sensitive goods. The impact of this change is greatest on the large apparel makers... and the troubles that it has brought them tell volumes about the liabilities of size (1986: 93).

Product proliferation and faster "cycles" of fashion are clearly major issues for the clothing industry. The average successful clothing trend lasted only 6–12 weeks in 1999. The number of new products introduced to the market each year is approaching 50,000 (Martin, 2000: E2). While an increase in the number of new products, and more rapid obsolescence of styles are trends occurring in many sectors of the economy, they are felt more intensely in apparel production. As Rutter and Edwards have noted, "car design changes every few years, clothing changes every few weeks... Garments don't just come in several models, but also two genders and myriad shapes, sizes, colors and styles..." (1999: 31).

But how much of this product proliferation is real? Stuart and Elizabeth Ewen have written that the success of the garment industry has been linked to its extraordinary ability to "produce and distribute standardized goods, laced with the lingo of individual choice and self-expression" (Ewen and Ewen, 1982: 226). They argue that much

of the power of the massive, late twentieth century U.S. advertising complex is its ability to train consumers to recognize highly nuanced differences among basically similar goods.

Industry has developed a number of strategies for selling the illusion of difference. The most important strategy for creating a sense of distinctiveness, and for targeting highly specific consumer niches, is the branding of merchandise. Brand names were important in the United States by the early twentieth century, but they have proliferated wildly in the last two decades. Advertising consultants argue that brands work through creating a series of lifestyle associations with a particular label. This provides the consumer with a way to sort through hundreds of thousands of products, by marking those that suit his or her demographic profile or lifestyle.

According to this logic, the same sweatshirt, labeled Tommy Hilfiger, Nike, Guess or Fubu, will appeal to very different groups. Add a logo for a professional sports team or a university and its market shifts still further. Use a lighter weight cotton thread, add some polyester, and step down quality control, and the same garment can be sold at a major discounter for one fifth the price of the branded shirt. These items can all be produced in the same factory, using the same machines, with extremely small changes in procedures.[5] The same is true for other apparel products. An article in *Forbes* quotes a manufacturer as saying that the "cost to make a pair of jeans runs from $8 for the cheapest to $15 for top of the line. Quality and weight of fabric account for some cost difference. But when all is said and done, jeans are just jeans." Despite this fact, a single issue of *Elle* Magazine ran 60 pages of ads for designer jeans in 1995, ranging in price from $30 to $150 (Levine, 1996: 155). Adding a brand name can create an illusion of distinctiveness among garments that are numbingly similar.

Brand name proliferation often creates the impression that a large number of firms are entering the market, but this is often an illusion as well. As Smith has noted in the case of bakeries, rustic brown bread is not only produced by small shops, but under trendy sounding names by the same large corporations that make white bread (1989: 215).

[5] At Tultex Corporation, in 1999, sweatshirts and tee-shirts were produced for branded marketers such as Nike (sold at $38 retail), for retailers such as Target and Walmart (sold at $6.49 retail), as well as for colleges and sports teams.

Liz Claiborne now markets clothing under more than 20 different brand names. Department stores and mass retailers introduce their own "private label" brands at different price levels with different styles targeted to particular demographic groups. All of this is expensive, entailing design costs, and massive expenditures in marketing and advertising.[6]

Maintaining a brand's integrity is a tricky proposition. While it is normal for a firm to want to expand their market as much as possible, selling a brand too broadly will erode its appeal. Dickerson notes that it is anathema to sell identical merchandise to department stores and discount stores under the same brand name, as the product will lose its appeal in the higher price market as soon as it appears in discount stores (1995: 255). Consultants to the apparel industry advise taking labels to new markets overseas for expansion, if possible, to avoid the "traditional dilemma, namely that by expanding sales they risk losing the mystique that lets them charge a fortune for clothes." Designers like Calvin Klein and Ralph Lauren are seen as having expanded their lines as far "downscale" as they can without "devaluing the brand" (*Economist*, 1995: 80). Executives at major firms refer to decisions about how and where to place brands as "brand stewardship."

Another arena in which illusions of choice are sold to the consumer is in the practice of mass customization, which has been hailed as the wave of the future in apparel retailing, and the ultimate response to market fragmentation and individualized tastes. The Textile Clothing Technology Corporation (TC2), a major textile and apparel consulting organization, has said that "mass customization leverages information technology to integrate the production efficiencies of mass production with the individuality of the craft era," and that "advanced technological developments, such as non-contact body measurement and digital printing, combined with short-cycle flexible manufacturing, can make the production of customized products an economically sound alternative to mass production" (Textile Clothing Technology Corporation, 2000). The impression

[6] Bonacich and Appelbaum provide the following figures: Nike spent $211 million on advertising in 1997, Levis Strauss and Co. spent $100 million and firms such as Polo, Ralph Lauren, Calvin Klein, Wrangler, Tommy Hilfiger spent over $30 million each (2000: 215).

created is that a customer can imagine and design his or her own garment and have it made to highly idiosyncratic specifications. Yet, upon reading further, it becomes clear that clothing can be customized in only three ways. The first is through "personalization," i.e., monogramming. The second is through producing to size. And the third is through "design," which refers to selecting the color, or in some cases the fabric. These choices are no more elaborate than those offered by any mail-order catalog. What differs is that a company offering such "customized" products will not maintain these items in stock, but will wait for a consumer request to trigger the quick production of an item. As with branding, mass customization represents the continued production and distribution of goods that are, in reality, standardized, "laced with the lingo of individual choice and self-expression."

If most of the variety currently on the market can be produced through normal assembly line practices, there is little reason to see market fragmentation as fostering flexible specialization. In fact, a close examination of current practices suggests the opposite scenario. The economic resources required to build and maintain brand recognition are significant, as are the resources for Internet marketing, and the non-contact body measurement technologies that are required for mass customization. These are expenses that can be most easily borne by large firms. If we examine the origins of product proliferation and mass customization, it becomes clear that these trends are actually being driven by industry leaders such as Levi-Strauss and Lands' End. Dicken has argued that the proliferation of designer labels in the apparel industry is a device used by big firms to differentiate similar products and encourage segmentation of demand (1998: 294). As Chandler noted for a much earlier period, mass retailers have little difficulty adding new lines that more intensively use their organizational capacity (1977: 237). A recent industry publication has echoed this earlier analysis, arguing: "the one with the most brands wins" (Hill, 1999).[7]

[7] The author goes on to explain, "in today's retail market, where the nation's ten largest purveyors of apparel across all channels had increased their market share to 47% in 1998, more in 1999, manufacturers are hard pressed to increase volume by brand. But they can build market share by expanding brand portfolios" (Hill, 1999b: 1).

Those firms that have the resources to produce a wide selection of brands and to aggressively market them create the standards and expectations — the consumer culture — within which other firms must compete. Selling a generic athletic shoe becomes impossible in a world where labels signify complex social positionings and affiliations. Thus market fragmentation is not a problem that restive consumers create for large firms. Rather, markets are fragmented by the branding and marketing activities of firms large and well-capitalized enough to engage in such strategies.

The Quick Response Problem

The second advantage that some theorists have attributed to small, flexible (domestic) firms is their ability to respond rapidly to changes in demand through quick response strategies. Quick response (QR) is an initiative that gained favor across many sectors in the U.S. in the 1980s, as companies sought to emulate the success of "just-in-time" strategies in Japanese firms. It encompasses a set of practices designed to shorten production cycle time based on extensive use of electronic data transmission from retailers to various segments of manufacturing (Dickerson, 1995: 265). It uses information and telecommunications technologies to link retailers and manufacturers into a single supply channel that is able to respond quickly to demand movements (Hammond, 1993: 191). While retailers previously ordered goods based on past years' sales and demand projections, under QR they order close to the selling season in small quantities and replenish stock on a demand-driven, as needed basis. Most of the enhanced speed is not due to more rapid manufacturing, but to the faster movement of materials between stages of production (Malone, 1999: 24).

The cost savings created by QR strategies are realized in reductions in inventory cost, the smaller amounts of product that are left unsold at the end of a season, and fewer lost sales due to lack of merchandise. There is also a savings in reduced transaction costs between sectors. Perhaps more important, however, are the ways that QR reallocates risk within the supply channel. Inventory costs and risks are shifted from the retailer to the manufacturer. Formerly risk

> was managed by allowing lead times long enough for each party in the channel to produce what its purchaser . . . ordered. . . . Firms

> were not required to order raw materials or manufacture products on a speculative basis.... When the retailer placed a garment order with an apparel manufacturer, the... manufacturer was given sufficient time to acquire the necessary materials and manufacture the products before the specified delivery date. Similarly, upon receiving the fabric order from the apparel manufacturer, the fabric manufacturer had enough time to acquire the necessary materials and make fabric (Abernathy *et al.*, 1995: 186).

Today, retailers have successfully off-loaded their risk. They no longer hold inventories of finished garments, but expect apparel manufacturers to hold inventories of cloth and other inputs; apparel producers, in turn, expect textile firms to hold stocks of yarns and dyes. This has created significant pressure on small-to-mid sized producers in both the textile and apparel sectors.

Despite the fact that QR was hailed as a new practice in the 1980s, it is perhaps better to see it as a new set of solutions to an old problem. Chandler (1977: 227) has written about the centrality of stock turn-rates to competitiveness in retailing from its earliest years. Early mass retailers, both department stores and mail-order houses like Sears, Roebuck & Co., realized that "profits are to be made on volume, not mark-up." They aimed at maintaining a high volume, high turnover flow of business by selling at low prices and low margins. More generally, Chandler argued that most organizational innovations of twentieth century mass production were responses to the need to coordinate and control high volumes of throughput, and that contributions to the velocity of production and distribution were far more significant in increasing productivity than economies of scale (1977: 281). Harvey has pointed to the ways that time involved in production and circulation represents a loss for capitalist firms, and to the continuing pressures to accelerate the velocity of circulation and to reduce the costs associated with it (1999: 86).

The emergence of QR in apparel production was less a response to the desire of consumers to have more clothing more quickly than to industry's new ability to use information and telecommunications technology to accelerate stock turn-rates and thus, the velocity of circulation of capital. The investments required to participate in a QR supply channel are substantial. To quote Abernathy *et al.* once again: "It is no accident that such innovative information and distribution relationships... emerged through Wal-Mart, Kmart and a national

chain like J.C. Penney.... The larger size of these mass merchants facilitated adoption of rapid replenishment practices" (Abernathy *et al.*, 1999: 51).

In the 1980s and early 1990s, QR was widely held to be incompatible both with large factories geared to producing standardized goods and with offshore sourcing. Waldinger, writing in this time period, argued that both subcontracting and offshore production introduced rigidities that made it necessary to order goods a year in advance of expected sale (1986: 95). Zeitlin and Totterdill argued that QR reduced the importance of clothing imports since lead times were too long and minimum production runs too large (1989: 167). Trade journals indicate that many firms did initially adapt to the demand for quick response by shortening their supply lines as a way of reducing the uncertainty associated with coordination and transport over long distances. In 1994, VF Corporation was cited as an example of a company which "has made QR a cornerstone of its marketing strategy" by sewing 85–90% of its apparel in the U.S. (Feitelberg *et al.*, 1994: 8). By 1999, VF's chairman was interpreting "local" sewing far more generously. "Firms on the cutting edge can turn fabric into clothes in two weeks. Apparel is already being manufactured closer to its selling points, a trend evidenced by the explosive growth of production in Mexico" (Malone, 1999: 25).

By the late 1990s, it had become clear that the implementation of quick response was a necessary, but not sufficient, condition for the survival of apparel firms. A 1997 issue of *Apparel Industry Magazine* boasted that all of the firms it had designated "All Stars" for that year both produced offshore *and* had made significant investments in QR technologies (1997: 1). A leading consulting organization noted that unless firms relocate production facilities overseas to reduce labor costs "we're not going to be able to compete, no matter what kind of whiz-bang Quick Response program you put in" (DesMarteau, 1999b: 55). Researchers at the Harvard Center for Textile and Apparel Research argued that new information and telecommunications technologies meant that firms no longer needed to choose between competing on scale and on the greater responsiveness of "local" production. They could achieve responsiveness to markets using the new technologies, regardless of where they produced, while continuing to operate at high volume (Hammond, 1993: 186).

Dickerson has raised the question of whether consumers actually need or desire fast turn-around or whether those retailers that are most

proficient at producing a diversity of products stimulate the need (1995: 480). Like branded marketing, quick response was a strategy that was initially used by large firms. It entailed costs that were difficult for small firms to afford. It provided competitive advantage, but not so much that firms could avoid moving manufacturing offshore to reduce costs. When QR was first introduced as an industry norm, small firms sought to compete through their responsiveness. By the late 1990s, however, responsive did not simply mean producing to short deadline, but possessing the software, hardware and distribution capacities that could effectively link the firm to retail partners. And only firms that were both "responsive" and able to lower their labor costs could survive. These were inevitably firms possessing sufficient capital resources to move, or to establish contracting networks, offshore.[8]

The Quality Problem

Since the late nineteenth century, the predominant method of producing garments in the U.S. has been some sort of bundling system. In apparel assembly, bundling systems have been the equivalent of the assembly line. Each operator received a bundle of unfinished garment parts and performed a single operation on each item. Completed bundles were moved forward to the next operator. In the 1930s, apparel firms began to use the progressive bundle system, which was a refinement involving the reduction of "buffers" between operators, the positioning of operators to facilitate movement of

[8] There is some evidence that QR has given rise to a greater "regionalization" of global production networks, making it more efficient for U.S. firms to produce in Mexico and the Caribbean, European firms in North Africa, Turkey and Eastern Europe and Japanese firms in Southeast Asia. The evidence for this is difficult to interpret, however, since the movement of U.S. firms to Mexico was also affected by the passage of the North American Free Trade Agreement in 1994. Still, Abernathy *et al.*, have noted that nine of the ten top goods imported into the U.S. from Mexico have been targets of "rapid replenishment" over the past seven years, while only three of the top ten goods from China are in this category. (Abernathy *et al.*, 1999: 267). A Vice President of Tropical Sportswear International attributes his firm's decision to produce in Mexico and the Dominican Republic to the fact that Far Eastern locations have longer lead times (Rabon, 1999: 34). Whether firms are relocating to East Asia or Mexico, they must be highly capitalized in order to coordinate global production for quick response.

garments between stations, and the calculation, through time study, of "standard allocated minutes" for each procedure (Abernathy *et al.*, 1999: 12, 27–28). The efficiency of this system turned on the fact that "buffering" allowed each operator to work at his or her own pace, since it was not necessary to wait for an individual garment to work its way down the line. This allowed the implementation of piece rate systems, with each operator's remuneration tied to the number of discrete tasks they could finish in a given work period (Appelbaum *et al.*, 2000: 71).

The literature on flexible specialization in the apparel industry has argued that it is difficult or impossible to meet the quality standards for high-end apparel using the progressive bundle system, or with the less skilled labor force, second-hand equipment, and poor supervision believed to characterize most third world factories. These accounts have argued that expensive clothing continues to require the craft-like production of small shops. Scott has laid out the argument in the following way:

> For labor intensive plants producing high-quality, high cost outputs of superior workmanship, control over the labor process is imperative... producers of high-quality dresses in short runs generally organize the manufacturing process on making through principles. This, by definition, reintegrates the labor process and reduces the opportunities for subcontracting activity. It also calls for skilled attentive work requiring constant and careful supervision. At the more routinized and standardized end of the production spectrum, manufacturing processes are commonly broken down into a detailed division of labor (i.e., section work) in which unskilled and semi-skilled employees work at a limited number of simplified operations. In this process, the quality of final outputs is directly traded off against extended and accelerated production runs (1988: 102).

Yet, as Gereffi has observed, the incentive to reduce the cost of labor may be highest in the high-end, fashion segment of the industry, precisely because of the labor intensity of production (1994: 102). This has led firms to work hard to routinize the work involved. Over the course of the 1990s, apparel producers struggled to develop best practices that would allow the assembly line production of high quality goods.

Hugo Boss, a German firm (later purchased by the Italian group Marzotto) was one of the innovators in this regard, developing assembly line practices for its $800 suits using state of the art machinery. Initially producing only in Germany and Italy, in the 1990s Boss expanded its operations to 25 locations including the U.S., Poland, Portugal, Romania, and the Czech Republic. Management sought to combine relatively brief training periods (3 weeks) and section work with extremely high quality production (and quick response). After some initial problems (losing a contract with Neimann Marcus that was later restored), the firm successfully formalized the procedures that made this combination possible (*Apparel Industry Magazine*, 1997).

By the mid 1990s, the ability to achieve a high quality product using some variation of the progressive bundling system had progressed so far that retailers began to pressure producers of high quality items to reduce prices through movement of facilities offshore and other means. As the CEO of a men's tailored clothing firm observed, "retailers require manufacturers that are capable of containing costs through engineering, system rationalization, economies of scale and other methods. Additionally they require excellent value in terms of quality and features" (Hill, 1999a). By the late 1990s, industry analysts were noting favorably the improved quality of goods that could be achieved through subcontracting in Mexico.

Flexible specialization theorists have held high hopes for team-based methods of production as a means to enhance quality, and the apparel industry experimented with such approaches in the 1980s. The results were mixed. One survey of experiments reported that operator earnings and total manufacturing costs were not greatly affected. Some firms experienced improvements in quality, while others did not. Overall, however, the concept proved to be difficult to implement and maintain (Fralix, 1999). A second study pointed out that

> in the 1980s, team based assembly was heralded for reducing costs and enhancing work force performance by the garment industry trade press, the major apparel manufacturing association, the major fiber and textile producers, the non-profit Textile Clothing Technology Corporation and the ACTWU. Despite this advocacy, these practices have not diffused to a significant degree. In 1992, about 80% of garments were sewn and assembled by a traditional Taylorist progressive bundle system. Only 9% used a modular system (Dunlop and Weil, 1996: 335).

This study found that many firms tried and discontinued the practice. Appelbaum *et al.* (2000) cite reports indicating that up to 13% of factories made some use of modules in 1992, but only 6% used them for more than half their production workers.[9]

Perhaps the most notable example of the way large firms have been able to achieve high quality standards is provided by industry giant Liz Claiborne. Claiborne produces for a variety of markets from designer bridge lines to moderate. The company is a classic example of a branded marketer, owning no factories and subcontracting out 100% of its production. It had annual sales of $2.2 billion in 1999, selling more than 130 million units of apparel and 30 million accessory items under twelve divisions. Claiborne's quality assurance program has two key features: supplier certification programs and a continuous quality improvement program called "statistical process control."

Through supplier certification, the firm seeks to insure that the factories with which it subcontracts will follow procedures that yield high quality goods. It makes certain practices a requirement for certification, and it provides training and technical support to its certified providers. The adoption of these certification procedures has required the firm to develop longer term relationships with fewer factories. While the firm worked with over 500 contractors in 44 countries in the early 1990s, it had reduced that number to 256 in 32 countries by 1999.[10]

Statistical process control is a procedure that Liz Claiborne borrowed from more highly automated industries such as heavy equipment and appliance manufacture and applied to apparel assembly. The approach requires inspectors to measure and record aspects of quality (both variable and attribute data) for a statistical sampling of garments that pass through each work station. The inspectors determine whether each operation was performed within upper and lower control limits. Measurements are charted, typically using a line graph on which

[9] The Director of the Aguascalientes branch of the Mexican Apparel Manufacturers Association reported that only one or two of the several hundred firms operating in his region had experimented with team production through the 1990s.

[10] Information on Liz Claiborne Inc.'s supplier certification program and implementation of statistical process control is drawn from (Rabon, 1999: 34) as well as interviews conducted with the company's management in February 2000.

ideal measures and allowable variance have been plotted. Variances that exceed limits signal an "unstable situation," and the inspector consults with the line supervisor and ultimately with the worker to develop a plan for bringing the operation back "under control." The firm believes that this method is superior to random inspections or end-of-the-line sampling since it allows the problem to be traced to a particular work station, allows for continuous monitoring of the performance of each operator over time, allows immediate feedback, and provides "visual" evidence of poor performance. By late 1999, the company produced 85% of its apparel using statistical process control, involving 98 of its 250 suppliers. It reported a 33% reduction in shipments which failed to meet quality standards from 1996 to 1999, and an additional 33% reduction during 1999 (DesMarteau, 1999a). Such a system is obviously costly to implement. As the head of the Aguascalientes branch of the Mexican Apparel Manufacturers Association noted, "normally it is only the largest firms that have this type of quality control."

Statistical process control represents what we might call "quality by other means," that is quality that is not achieved through tapping and enabling the skills of workers, but that is "controlled in" through intensive supervision. Just as piece rates traditionally measured the productivity of apparel workers,[11] SPC makes it possible to attach numbers to the *quality* of the work, and to remunerate in accordance with those numbers. "Making quota" thus becomes a more complex procedure, requiring the worker constantly to maximize two variables at the same time. In factories where SPC has been implemented in Mexico, it has frequently been combined with new methods of time management such as the Garment Sewing Data (GSD) system, which refines the determination of time allocation to each task in the production process.[12]

The case study of facilities producing for Tultex and Liz Claiborne in Aguascalientes, Mexico, revealed that commodity and fashion garments could be produced under similar conditions. Factories producing for both firms used the progressive bundle system. Workers in

[11] In 1996, 91.4% of apparel firms still relied on piece rates to set worker pay. (Dunlop and Weil, 1996: 129).

[12] Interview with director of quality assurance at large apparel plant, Aguascalientes, Mexico, 3/24/00.

both plants received the same pay and training. Neither factory used work teams, recognized different degrees of skill, or gave individual workers the responsibility for constructing a whole garment — the "making through" principles described by Scott (1988).

The factories were not identical, however. The facility producing for Liz Claiborne was large, well-lighted, and well-organized. Workers sat at their stations and stations were posted with graphs and charts tracking the accuracy of the operation. The facility producing for Tultex was smaller, darker and less tidy. Workers appeared less tied to their specific stations, and the flow of garments was more intermittent.

Statistical process control requires a well-organized plant and good equipment. As a practice, however, it is a far cry from the enhanced worker autonomy, modular work teams and skilled production that flexible specialization theorists associate with high-end manufacture. It represents a deepening and extension of Taylorist principles on the shop-floor. It measures production values formerly unmeasurable and holds workers to more complex sets of standards than any implemented in the industry to date. And, while many of the costs are borne by the subcontractors, others (training, support staff, monitors, certification programs) are costs to the branded marketer. Initiatives of this type not only involve extremely large investments by the firm, but require the clout of a large company offering substantial long-term contracts, for implementation. It is highly unlikely that a subcontracting factory would set up such procedures without the promise of the stable, long-run contracts that only large firms are able to provide.

Conclusions: Flexibility and Mass Production in a Global Division of Labor

In 1994, Bennett Harrison published an important account of the role of large corporations in the global economy. He argued that, despite a disproportionate amount of focus on small business entrepreneurship in the popular press, large firms have remained dominant actors. They have done so through strategies that Harrison called "concentration without centralization." That is, they have pared down their mix of core activities, while sub-contracting riskier and less profitable tasks. They have coordinated their operations through

networks, alliances and short- and long-term financial and technological deals. This has enhanced the flexibility of large firms, but it has not altered their control. While these trends undoubtedly signify decentralization of production, Harrison asserted that it was wrong to see them as evidence of a decline in the effectiveness of large corporations. Rather, decentralization "...was being governed, managed, and coordinated... by increasingly powerful, concentrated business organizations" (1994: 247).

In articles written in 1994 and 1999, Gereffi has contributed to our understanding of how "concentration without centralization" works in the specific context of consumer goods industries — what he calls "buyer-driven commodity chains." These are industries where Chandler had argued that economies of scale are not great. They have traditionally been more fragmented and less concentrated than producer-driven industries like oil, steel or aluminum (1990: 27). Gereffi's work is important in showing how the competitive pressures associated with retail consolidation and globalization of production have made "bigger–better" even in historically fragmented buyer-driven apparel commodity chains. He has described the role of large retailers and brand-name merchandisers as "lead actors" in organizing the decentralized production networks that have fueled concentration at the top of the industry.

The account presented here builds on this work in explaining *how* large firms in the apparel industry have been able to overcome conditions that have been seen as obstacles to the production of high-end, fashion goods; that is, how they have been able to produce rapidly changing, high-quality goods for a fragmented consumer market. It challenges the assertions of flexible specialization theorists, who have argued that quick response production of high quality apparel is not possible using mass production methods and that demand for such products will create a stable niche for small, craft-like firms at the "top" of the apparel market. While the account provided here acknowledges that there *were* important obstacles to large firm participation in this segment of the market in previous periods, it argues that they were not insuperable, and that large branded marketers in the 1990s found ways to overcome them.

The fact that large firms have found ways to overcome these obstacles suggests a more general flaw in flexible specialization theory. The characteristics that the theory seeks to explain or predict (workplace democracy, collaboration, respect for skill) are not simply the

effects of particular technical processes, industrial organization or consumer demand. They do not result automatically from impediments to mass production. Where they occur, they have been the result of political commitment or redistribution of power within industries and workplaces. In the 1990s, after more than a decade of deflationary pressures in the apparel industry, firms were not responsive to labor's pressures for such reform. Rather, they innovated in seeking "low road" strategies. As new telecommunications and information technologies enhanced the coordination of geographically dispersed production networks, firms invented new ways to "control in" quality while decreasing response time and lowering the wage bill.

The most successful large firms of the 1990s were those that engaged in branded marketing. These firms managed, as Rabach and Kim have argued, to retain control over the most profitable nodes in the global apparel commodity chain while delegating the responsibility and risk of less profitable nodes to subcontractors. The profitable nodes — predominantly design and marketing — were kept in the U.S., while labor intensive stages of production were performed overseas (1994). Such strategies required firms to maintain an illusion of "art" and exclusivity at the top of their brand structure, while standardizing and disseminating designs — under different brand names — to a wider consumer market. They depended on sophisticated branding and marketing techniques to create a sense, among consumers, that they were making highly individualized choices, while purchasing garments that could, in fact, be mass produced. They required the adoption of new practices of electronic data interchange that allowed far-flung production operations to be as responsive to market shifts as small shops in the garment districts of New York and Los Angeles. And they required garment assembly practices that monitored and tightly controlled the operations of each individual worker on a continuous basis. These costly innovations not only allowed large firms to survive at the top end of the market. Once established, they allowed them to set standards for quality and speed of response at a price that no small firm could match.

In highlighting these new strategies of firms, this account is not as optimistic as some other work. Abernathy *et al.* have said, "today's U.S. apparel and textile industries — left for dead by business commentators and economic analysts in the 1980s — have begun to transform themselves, reaping new competitive advantages" (1999: 1). This is undoubtedly true, but not for all firms. Business failures among

apparel manufacturers have increased and U.S.-based employment has declined. In this "dark and bloody" period (Rutter and Edwards, 1999: 30), large firms have emerged as the victors through organizing globally networked production.

The account provided here is also less sanguine than some about the impacts of the practices that permit large firm success, pointing, in particular, to the more stringent forms of labor control that are involved. Subcontracting and new forms of "virtual vertical integration" provide opportunities for large firms to combine flexibility and global reach, as Harrison suggests. They allow corporations to harness the dialectic between innovation and standardization — "industrializing 'haute couture.' " At the same time, far from reconstituting skilled, craft-like production in small shops, the new forms of vertically integrated flexibility practiced by apparel firms give rise to new forms of Taylorism. Industrial innovations such as statistical process control allow high quality fashion goods to be produced "just-in-time" in factories throughout the developing world.

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