

(Working Paper Series - 106)

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REGIONAL INDUSTRIAL AGGLOMERATIONS
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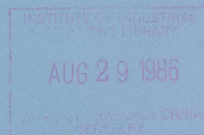
Michael Storper* and Susan Christopherson**

*Michael Storper
Assistant Professor
Graduate School of Architecture and
Urban Planning
U.C.L.A.
① Los Angeles, California 90024
(213) 825-2718

**Susan Christopherson
Assistant Professor
Department of Geography
U.C.L.A.
Los Angeles, California 90024
(213) 825-1912

*University, Institute of Industrial
Relations (Los Angeles)*

Draft: February 1986
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Michael Storper** and Susan Christopherson*

*Department of Geography
University of California
Los Angeles, California 90024 USA

**Graduate School of Architecture and Urban Planning
Urban Planning Program
University of California
Los Angeles, California 90024 USA

January 1986

NB: The research on which this paper is based was carried out with support from the John Randolph Haynes and Dora Haynes Foundation and the UCLA Institute of Industrial Relations. The conclusions are solely those of the authors. A more extensive discussion of the motion picture industry is contained in Christopherson and Storper, 1985b.

The authors would like to thank the following students in the UCLA Urban Planning Program for their able research assistance: Larry Barth, Robin Bloch, Gillian Court, Rebecca Day, and Rehema Grey.

1. FLEXIBLE SPECIALIZATION AS A FORM OF INDUSTRIAL ORGANIZATION

Since about 1930, U.S. and Western European literature on industrial organization has been dominated by the idea that a "mature" industry is one in which large firms carry out commodity production with mass production methods (Burns, 1934; Kuznets, 1930; Schumpeter, 1942; Vernon, 1966; cf. Storper, 1985). Underlying this conception lie models of sectoral development which hold that industries have a "normal" development path, one which starts with small-scale production and a disintegrated organizational structure, and ends with a mass production system organized by vertically- and horizontally-integrated firms.

This conception of sectoral development has been canonized in a variety of models in industrial economics, the most important of which is the product cycle (Vernon, 1966, 1979). It is also the implicit historical vision of much work on the large corporation, oligopoly, and the "managerial revolution" (Berle and Means, 1932; Galbraith, 1967; Storper, 1985).

Several years ago, these conceptual biases began to be challenged. Berger and Piore (1982), for example, argue that small-scale production is an enduring correlate to mass production, because subcontractors absorb uncertainty or instability for mass production firms. Mass production systems actually create uncertain and unstable market niches, because their technologies only come in large lumps which may not precisely fit the extent of the market. Analysts of Third World economies also suggest that informal sector firms may be integral parts

of industrial production systems dominated by formal sector firms. Subcontracting relationships permit formal sector companies to avoid labor market regulation (Portes and Benton, 1984).

Most recently the whole idea that mass production is the necessary culmination of sectoral development has been questioned. Piore and Sabel (1984), for example, point out that the paradigm of mass production is based on selective readings of both industrial history and the industrial present. They claim that the dominant thinking about mass production incorrectly transforms the particularities of 20th century industrialization in the U.S. and Western Europe into the universalities of a developmental logic.

These researchers point out that mass production was only one of several possible forms of industrial organization that could have evolved in the early 20th century. They provide contemporary examples of sectoral development that run counter to the dominant view of mass production. Bagnasco (1977), for example, looks at firms in the Tuscany and Emilia-Romagna regions of central Italy. He claims that a "Third Italy" exists, i.e. a region characterized neither by the mass production firms of the North nor underdevelopment as in the South. The firms of the Third Italy produce specialty goods, with short production runs, using skilled artisans. Since these firms are capable of responding quickly to changing market conditions, they are flexible. These small shops are connected to the market via contracts with other firms (Brusco and Sabel, 1983). They are not producing new products but, on the contrary, include industries such as textiles, industrial machinery, and automobile components.

"Flexible specialization" describes a system of industrial

production organized around the interactions of a network of small firms. These small firms specialize in certain types of outputs, but not in the production of specific outputs in large quantities, as in mass production. They may use relatively sophisticated technologies, but in the form of general-purpose machines, rather than large-scale, integrated machine systems. Their workforces are composed of quasi-artisanal craftspersons, who are capable of using general-purpose equipment to produce a variety of similar types of outputs. These workers are skilled in a general sense, rather than semi-skilled to repeat a narrowly-defined task.

The most important source of flexibility is the production system itself. The production system as a whole is flexible because each production project can be organized with a different mix of specialized input-providing firms. In more conventional parlance, these firms are subcontractors, in a system of production which is vertically-disintegrated. The new system is what Bagnasco (1977) calls a fabbrica diffusa, by which he means a regional production complex of firms who have dense webs of transactions with each other.

Almost no empirical investigation of this form of industrial organization and its potential consequences for industrial location, urbanization, and regional development has been carried out. There has been some speculation, however, about the spatial correlates of flexible specialization, centering on the idea that it produces a re-agglomeration or at least a re-regionalization of certain industries that dispersed in space when they were vertically integrated. If this is valid, then flexible specialization has profound implications for urbanization and regional development.

In this case study, we present evidence on the spatial behavior of

an industry that is well advanced along the road toward complete flexible specialization: the U.S. motion picture industry. In this industry, a very powerful spatial agglomeration tendency has accompanied vertical disintegration.

We begin by reviewing the theory that underlies subcontracting and flexible specialization and present evidence on flexible specialization in the motion picture industry (Section 2). We then examine the spatial behavior of the industry as a whole and the logic of locational decisions of individual firms (Section 3). Finally, we explain the local labor market dynamics of the industry and how they reinforce its agglomerative behavior (Section 4).

2. VERTICAL DISINTEGRATION AND THE ADVENT OF FLEXIBLE SPECIALIZATION

2.1 The Theory of the Firm and Industrial Organization

In addition to the historical debate alluded to above is a theoretical one, unfolding on the well-trodden ground of industrial organization analysis and the theory of the firm. Much of what we have described as flexible specialization is an elaborate form of production subcontracting. In an early analysis of this phenomenon, Coase(1937) elaborated a general theory for explaining intra-sectoral contractual relations. He argued that the border between the firm, as a system of internal(non-market) transactions, and the market, as a system of transactions between firms, would be quite fluid over time (cf. Scott, 1985).¹ This is because the advantages to be had from internalizing parts of the production process (which implies risk assumption) and externalizing them (which implies loss of control and potential profit

centers) shift according to changes in the sector's markets, technologies, labor relations, and so on. Recently, Scott (1985) has explored the locational implications of Coase's theorem.

Two interrelated concepts form the core of Coase's analysis of the boundary between the firm and the market, those of production scale and organizational scope. Let us begin with scale. Beginning with Adam Smith's famous dictum on the relationship of the division of labor to the extent of the market, we can say that scale is, in the simplest sense, relevant to industrial organization because it affords opportunities to routinize the production process and by so doing, introduces the possibility of nonproportional increases of output for given levels of input. In this case, as in Smith's legendary pin factory, economies of scale result from the increasing division of labor afforded by routinization. Conversely, when a product output does not have a large or standardized market, the production process will resist routinization because fixed production overhead will be more costly than the reductions in direct production costs per unit it makes possible.

Coase, and those who have followed him, ask how this technical or detail division of labor is constituted and reconstituted over time as part of a social division of labor, "in which particular labor processes break institutionally away from one another and become reestablished in individual firms linked across a market" (Scott, 1985b: 10). In other words, it raises the question of the vertical integration and disintegration of production.

The number of stages of production which can feasibly be carried out within a firm or at a particular workplace is determined by the internal economies or diseconomies of scope which may be present. For

example, the large scale of production in the routinized process encourages producers to bring many parts of the production process under their control -- either under one roof, in a big factory, or within the firm. This involves the vertical integration of production within the firm, which then produces its own inputs and integrates them into its profitmaking activities. The firm has a large scope of activities in the production process, as well as a large scale. Conversely, when the process resists routinization, just the opposite will occur. Firms will reduce their overhead costs in the face of an unstable or small market. They will reduce the scope of their activities, tending to obtain inputs on the market. In this case, production is vertically disintegrated. Firms are more specialized. In the case of vertical disintegration, many of the transactions related to production are internal to the firm; in the case of vertical disintegration, they are external to the firm, carried out instead on the market.

The motion picture industry has become vertically disintegrated and flexibly specialized. But it was not always organized in the way it is today.² In what is considered the "golden age of Hollywood," motion picture production resembled large scale manufacturing industries with routinized production processes. From 1920 to approximately 1950, the motion picture industry was a concentrated oligopoly. Seven major studios owned their own theater chains, and in major regional markets of the U.S. (cities with more than 100,000 residents), five of these firms controlled 70% of first-run theater capacity. In 46% of all markets, one of the major studios controlled distribution to all theaters. With market outlets assured, the studios could standardize

the product and the production schedule.

Studios secured stars on long-term contracts and set them to work on a schedule of twenty to forty films per year. Production groups were charged with completing filming every five to seven working days, and were backed up by staffs of pre- and post-production workers. Filming was organized so as to shoot similar scenes together, rather than according to their chronological appearance in the story. This rationalization of the labor process was known as the "continuity script."

This phase of highly rationalized production was followed by a period of internal reorganization, brought on by the forced divestiture of the studios' theater chains in federal anti-trust action in 1948, and then by television and suburbanization in the 1950s (cf. Christopherson and Storper, 1985). From 1950 to the end of the 1960s, the major studios dominated production within a hybrid structure that included independent producers and a significantly reduced in-house production schedule. During this period, the major studios responded to the changing profit environment by differentiating the film product and expanding the market for theatrical film.

After the recession of the early 1970s, a distinct industrial production organization began to crystallize. The major studios maintained a firm grip on the financing and distribution of high-budget theatrical releases and also moved into production for television. But the production process itself became organized on the external market rather than within the firm. It is carried out through a series of transactions linking firms and individuals in production projects, (the "deal" in Hollywood parlance). The major studios reduced their permanent production workforces and some of them sold major portions of

their studio production facilities in order to reduce fixed capital stock.

Today, the movie product is highly differentiated. Each picture tends to have significant differences in story and cast from the other, making it difficult to routinize production. Production firms specialize in carrying out generic tasks which can then be applied to different specific production processes. These specialized establishments subcontract their services and equipment to a producer who organizes the film project. Production is carried out through smaller, independent production companies, either with or without major studio affiliation. The scale of output is limited and the scope of their activities is relatively narrow. Production activity is thus carried out through market transactions among these establishments rather than transactions internal to a large firm.

The small specialized establishments, in turn, reduce their risks by marketing their specialized services across industry boundaries. By doing so they offset some of the uncertainty they face in motion pictures by increasing their horizontal market linkages. In addition, the technological revolution in entertainment brought about a merging of film, television, music, and video products. The The entertainment industrial complex can "mix and match" specialized production firms for a flexible output. Since the major studios continue to dominate financing and distribution, the industry is both vertically disintegrated on the production side and highly concentrated when it comes to product definition and marketing.

2.2. A Profile of Vertical Disintegration in the Motion Picture Industry

In an industry undergoing a process of vertical disintegration, the share of a few big firms in direct production is expected to diminish over time. Instead, production is carried out by a greater number and more diverse set of organizations. Unfortunately, there is no published source of data on the types of production organizations responsible for making motion pictures. And, as we have noted, since major studios continue to dominate distribution and are the formal receivers of box office revenues, it would be misleading to equate the distribution or receipt of revenues from films with their actual production. To measure the organizational location of production, we therefore constructed a file of all films whose production was reported in the "film charts" of Daily Variety and The Hollywood Reporter, at five-year intervals between 1960 and 1980, with a supplement for 1984. This resulted in a sample of approximately 1200 films.

Table 1 reports the changes in the types of organizations carrying out production in the motion picture industry. The trend toward production by independent companies and away from the major studios, is clear. Of our sample, 43% were produced by independents, alone or jointly, or with an individual producer. 47% were produced by the majors or by the majors with an independent or individual producer, 9% by minimajors, and 1% by television production companies.

More importantly, the proportion of motion pictures produced over the period by different types of production organizations has shifted quite dramatically. In 1960, 28% of the motion pictures were produced by independents or independents and others. 66% were produced by majors or majors along with another producer. Independent production as a

proportion of the total number of motion pictures produced dropped even further to 21% in 1965 but by 1970 had begun a steady rise in proportion to the majors and mini-majors.

Thus, of the motion pictures produced in 1975, independents made up 60% of the total, while the share of productions undertaken exclusively by major studios declines to 33%. In 1980, the dominance of the independents continued even as the total number of films produced declined. Independents produced 58% of the total number of films while majors produced 31%. Minimajors produced 11% of the total number of films for 1980.

These proportions do not necessarily correspond directly to proportions of investment in film productions or to box office receipts. Data do not exist to trace investment in film productions according to production company. It is probable that the films with the very largest budgets enjoy the participation of the major studios, but a significant share of these is still made by independent or semi-independent³ production companies. They are financed only in part from major studio funds, the remainder coming from independent investors. In other words, it would be inaccurate to assume that independent production companies are involved only in economically marginal films; they are directly involved in most of the large budget theatrical films and many of the network television series being made today.

In order to establish the nature and extent of the vertical disintegration of production inputs, we examined the births and deaths of selected film-making services and facilities in the Los Angeles area.⁴ One would expect these firms to increase in number, but to drop in size, as major studios externalize inputs they formerly provided

from units within their own organizations.

The facilities and services tabulated all increase in absolute numbers during the period. Given that motion picture output was stable⁵
for the index years, the magnitude of these increases provides convincing evidence of a trend toward vertical disintegration. Certain production activities were spun off from the large integrated studios into increasingly specialized establishments, and are now purchased from those subcontractors.

The greatest gains in number of firms during the 1966-1982 period were in those firms with functions directly related to the production process -- production companies, rental studios, properties, editing, and lighting. Editing firms increased 2725% during the 1966-1982 period; lighting firms, 1050%; rental studios, 415%; properties, 178%; and production companies, the largest single category in absolute number of firms (1473 firms), increased 162%. In every one of these cases, the major leap in the number of firms was in the 1974-82 period, after the cyclical downturn of the early 1970s (Table 2).

Further insight into the trends occurring in production houses comes from analysis of the date of founding and employment in production houses. Our sample of 231 includes firms specializing in commercials, industrials, animation, and special effects as well as theatrical and television production. The establishment dates of these firms replicate other data we have indicating industry cycles. Most of the firms were established after 1970. Out of a total of 200 firms reporting establishment dates, 140 were established between 1971 and 1982 and only 39 between 1961 and 1970. The largest surge in firm establishment was in the late 1970s. All of these firms are characterized by variable employment depending on projects. They

frequently qualify their employment figures with "regular" or "full-time". Their stable employment base is small. Average firm size is 10, but employment for 120 out of the 159 firms reporting employment data is between 1 and 10. The remaining 39 are much larger.

In the category of firms providing post-production services (recording; film effects; and film labs) there is a more variable growth profile than for facilities and services as a whole. Film processing labs increased in number from 1966 to 1974 but have declined since then by 27%. This is presumably attributable to technological advances in film processing that occurred in this period and which are confirmed in occupational statistics that show a drop in the demand for technicians. Recording studios, in contrast, increased 835% between 1966 and 1982. Firms specializing in film effects increased by 320% throughout the period (Table 3).

Vertical disintegration, as we have noted, is associated generally with product differentiation, which destandardizes the output. Thus, it is logical to expect a greater number of firms involved in marketing in a vertically-disintegrated industry than in an integrated one, and for the number to increase with greater disintegration. The importance of marketing in this increasingly elaborate industrial complex is suggested by trends in the group of services loosely categorized under public relations. These include market research; artists' representatives and publicists. Among these firms the big gainer has been in market research which increased from 5 to 24 firms between 1974 and 1982. Artist representatives increased 48% between 1966 and 1974 and then declined 6% by 1982 (Table 4).

The findings with respect to specific types of firms confirm the

organizational proliferation that is expected in a disintegrated industry and are confirmed by statistics on the total numbers of establishments in the SICs related to motion picture production:

TABLE 5
ESTABLISHMENTS - U.S.

| | <u>1968</u> | <u>1974</u> | <u>1981</u> |
|---|-------------|-------------|-------------|
| <u>SIC 7813</u> : Motion Pictures Exc. TV | 666 | 1279 | 1023 |
| <u>SIC 7814</u> : M.P. & Tape Prodn for TV | 490 | 978 | 1420 |
| <u>SIC 7819</u> : Services Allied to Motion Picture Production | NA | 716 | 1077 |

Source: U.S. Dept. of Commerce, County Business Patterns

In interpreting these statistics, it is important to remember that output for the index years was essentially stable. Most significantly, SIC 7819 was only created as a reporting category in the mid-1970s, presumably because the number of establishments in part of the industry had increased very rapidly since the previous census.

In a vertically-disintegrated industry, the number of firms in the "services allied to" sector would be expected to grow, as shown above. In addition, firm size might be expected to decline with greater competition and specialization. Table 12 (see Section 3) shows that the size of establishments in SIC 7819, measured by number of employees, underwent a steady decline throughout the period under examination. This is dramatic in light of the fact that firms in the other SICs experienced size increases because they were rebuilding after the recession of the mid-1970s. In other words, firm size in the service-providing subsector was declining in a boom period.

3. DISINTEGRATION AND REGIONAL INDUSTRIAL AGGLOMERATION

Evidence from a range of countries indicates that new industrial location patterns are in the making as a result of the changing organization of manufacturing sectors. In Japan, for example, the automobile industry is highly agglomerated, as is television manufacture and other industries (Ikeda, 1979). In the U.S., it has been suggested that a switch from the "just-in-case" system of routinized materials and information transfer between units of the industrial production system to the "just-in-time" system of more frequent and smaller-scale transactions, requires geographical proximity (Estall, 1985; Altshuler, et. al., 1984; Business Week, 1985). There are three reasons for this to occur. First, transactions costs tend to increase as the scale of those transactions is reduced and their frequency increased. Second, managerial demands for uniformly high product quality increase, requiring frequent monitoring of input providers, generating another type of transaction which would be difficult and expensive to carry out at great distance. Third, and related to the second reason, frequent product changes reduce the scale of transactions over time, and may require the intensive use of producer services in the continual restructuring of supplier networks. Thus, tight coordination between input providers and consumers is needed. All of this is consistent with spatial linkage theory in general (cf. Scott, 1983).

The spatial outcomes of an increase in transactions-intensity will always be sectorally-specific (and sensitive to the weight-value ratio of the product) and subject to developments in transportation.

Nonetheless, increased transactions intensity appears to be strongly associated with spatial agglomeration (Scott, 1983). The widespread adoption of flexibly specialized production would mark a dramatic departure from the non-agglomerated form of spatial organization that has characterized many manufacturing industries in recent decades. Flexible specialization would have a major impact on urbanization, regional development, and trade patterns.

Piore and Sabel (1984) go so far as to claim that flexible specialization entails the revival of the "industrial district" associated with this form of industrial organization. The industrial district -- such as 19th-century Lyon, Solingen, Sheffield, Lynn, or Newark -- facilitated coordination among specialized firms in transactions-intensive, vertically-disintegrated production systems (cf. Dawley, 1976). Some have compared these industrial districts to the regional production complexes of contemporary Japan (Ikeda, 1979; Johnson, 1984).

The motion picture industry presents a particularly interesting case because its trend toward vertical disintegration was in full swing at least fifteen years ago. Therefore, the spatial behavior of this industry may provide some more general insights into the implications of disintegration and flexible specialization for industrial location behavior.

The manufacture of a motion picture has a production process consisting of three principal stages: pre-production, production (filming), and post-production. Pre-production includes the preparation of the script, assembling of the crew and identification of locations. Post-production includes editing, special effects, and distribution. As

with any production process, the different stages may be spatially disarticulated from each other.

Beginning in the 1960s, the filming of motion pictures began to move away from Los Angeles. In that decade, there were some tendencies for business establishments and employment to decentralize away from the industry's center in Southern California as well. But by the mid-1970s, when vertical disintegration generally characterized the organization of the sector, a powerful trend was established to reagglomerate industry establishments and employment in Los Angeles. This trend has continued through the early 1980s. There is even a trend, somewhat less powerful, for filming to return to California.

Tables 6-8 show changes in the location of employment in the motion picture industry.⁶ In SIC 7813 (motion picture production), there was a very clear concentration in California between 1968 and 1981, with a temporary drop in California's share in 1974. In SIC 7814 (television), there was dramatic concentration in California between 1968 and 1974, and then some of the gain to California was lost. Over the entire period, there was net concentration in California.

Given the strong role that New York has occupied in television production from its inception -- TV having never completely abandoned its New York base -- this shift indicates a decisive change in the locational logic of television production. In SIC 7819 (services allied to motion picture and television production), employment has always been highly concentrated in New York and California, but now concentration in California is increasing at the expense of New York.

Tables 9-11 show the location of business establishments in the industry. Establishments in the motion picture industry proper(SIC 7813) show a tendency to decentralize nationally -- i.e. New York's

position as secondary center is giving way to a more dispersed pattern -- while California's position as the principal national center is stable or slightly stronger. In the other SICs, by contrast, agglomeration is very strongly in evidence in the form of California's gains of 9-10% in its share between 1968 and 1981. Once again, the relative positions of New York and California in television production shift decisively: in 1968, New York and California had almost equal numbers of establishments, but by 1981, California had twice as many as New York.

Table 12 suggests why California had the temporary drop in share of employment in SIC 7813 in 1974. The industry was in a deep cyclical recession from 1971 to 1975. California's share of establishments remained stable during the period. Table 12 shows that layoffs between 1968 and 1974 were more severe in California than the national average (1974 employment per establishment at only 40.7% of 1968 levels, as opposed to 48.2% for the U.S. and 54.3% for New York). Note, however, that in all periods, the gross size of establishment (measured in terms of employees) is much greater in California than elsewhere. Recession layoffs were proportionately greatest in California. Moreover, the ratio of supervisory or managerial personnel to total employment is probably lower in California than elsewhere (as a consequence of the greater proportion of the workforce involved in production and the larger establishment size), leading to a greater proportionate loss of employment in the recession than in the other places (Storper and Christopherson, 1985a). In other words, 1974 does not represent a structural tendency in the location of employment, only a cyclical effect.

There was greater spatial concentration of establishments in SIC 7814 and SIC 7819 than in SIC 7813. In one sense, this is due to the much larger establishment size in SIC 7813, where the lowest proportion of establishments is agglomerated in Los Angeles, but the highest proportion of employment (more than 73%). This can be explained by the continued presence of large studio properties in Los Angeles. Because of the abundance of studio space in the region the construction of small facilities has not been economically feasible. The major studio facilities (which are, in reality, complexes of many stages in one location) are a residue of the earlier studio system. The major studios now rent them for independent efforts as well as for their own productions.

While there are indeed many establishments spread across the country in SIC 7813, most of these are small companies or stages. which do not appear to be responsible for a proportionately large share of the filming. We do not have figures on the physical size of these establishments, but we can guess from these figures that a much larger share of production capacity is concentrated in Los Angeles than our figures on establishments allow. Moreover, many of the facilities outside Los Angeles are double-counted, because they are really adjuncts to regional television facilities that can be pressed into service for the occasional motion picture project. Their primary reason for existing is to produce television programs and commercials for regional markets. Some are rental studios built on speculation and used infrequently. The exceptions are the studio complexes of Dino de Laurentiis in North Carolina, and Burt Reynolds in Georgia, and the smaller rental facilities in New York City. In effect, the spatial spread of establishments in SIC 7813 is more ostensible than real.

The location of the production (filming) stage is more widely dispersed than the location of employment and establishments (Table 13). The peak year for filming feature films and made-for-television films in metropolitan Los Angeles was 1960. The trough in both relative and absolute terms was 1970. Since 1970, the shares of both Los Angeles and California as a whole have risen, but much more slowly than the concentration of employment and establishments, implying that Los Angeles is recovering from a devastating loss of filming activity in the 1960s, but is not on the way to reasserting its position as the undisputed center of filming activity in the U.S.

As noted, one of the aspects of disintegration has been the rise of independent production companies. There are some differences in the particular spatial patterns of filming on the part of these different types of production companies. Of the films shot in California, but outside Los Angeles, between 1965 and 1980, 68% were made by independents and 29% by major studios. Of those made in Los Angeles and Southern California, 34% were made by independents and 55% by the major studios alone or in partnership with another producer (Figure 2).

Of the films made in New York, 41% were produced by independents and 50% by the majors. In Florida, 67% were made by independents; in Texas, 53% were made by independents. Of the 132 films shot in other places in the U.S., 45% were made by independents and 45% by majors. The major studios clearly have produced the majority of pictures shot in Europe (53%) while of the films shot outside of North America and Europe, 59% were made by independents.

Feature films made with significant participation by the majors tend to locate in Los Angeles and New York to a greater extent than

independent production. Films made principally by independents have favored locations in the world outside Europe and, within the U.S., in a wide array of locations outside of the traditional centers, Los Angeles and New York.

Underlying these differences between the locational behavior of major studios and independent production companies are differences in the economic pressures they face. For example, since low-budget, made-for-television films are a greater proportion of the output of the independent companies, these companies face greater cost constraints.

In addition to these market-based and organizational pressures for decentralization, the relative cost of production in California locations has increased. In large part, this is another version of the familiar story whereby the conditions of production in a region set down in one period of time are experienced as constraints on successful production at a later period, when competitive conditions and organizational possibilities change. Studio facilities and labor relations were established in Los Angeles during the period of vertical integration and before location shooting became the norm. Many of the studio facilities in Los Angeles are sized for large batch production. In addition, the major studios' rates include charges for their unionized workforce, adherence to work rules, and heavy mark-ups for materials. Work rules are more important than hourly wage rates. Staffing levels can be lowered where union work rules do not apply. On location, union work rules in Los Angeles restrict daily working time, often requiring additional, costly shooting days.

On the other side of the locational calculus, technological developments such as cinemobile, steadicam, and panaflex have made location shooting easier and capable of producing very high quality.

These technological innovations, however, did not cause location shooting. They emerged largely in response to vertical disintegration, as independent production companies searched for alternatives to the studios. Finally, the promotional activities of state and local film councils have increased producers' knowledge of alternative locations. (Storper and Christopherson, 1985b, Chapter 5).

None of this would have occurred, however, without vertical disintegration, which made it possible for independent production companies to get a foothold in the first place. Vertical disintegration has also affected the locational choices of the major studios. They have shed much of the overhead associated with their facilities and backlots, freeing themselves to carry out production on location. In doing so, they have created a new standard of realism in motion pictures.

3.1. The Causes and Nature of Contemporary Reagglomeration

Subcontracting firms have increasingly concentrated in Los Angeles in the past decade because the specialized nature of their services and the constant change in product output requires non-routine, frequent market transactions with other firms, such as production companies and major studios. By concentrating in the center of the motion picture industry they maximize their opportunities for gaining contracts. The transactions ("deals") associated with this process often require face-to-face contact. Small firms congregate in Los Angeles to maximize the volume of these transactions. Production companies and major studios encourage them to do so in order to facilitate the managerial coordination required by the complex and

external input-output relations associated with a non-standardized product output.

Moreover, there are inter-industrial economies of agglomeration at work. Many of the subcontracting firms specialize in a particular activity (recording; special effects, etc) but not in a particular fixed output. They market not only to the motion picture industry, but to as many segments of the electronic entertainment industries as they can. Almost all these firms work in both film and video formats and produce commercials, industrial and educational films, as well as theatrical or made-for-television movies. Only a small minority concentrates exclusively on television and feature films. The formation of this flexible entertainment industrial complex implies very strong forces of agglomeration. As uncertainty has been transmitted down the subcontracting hierarchy within the motion picture industry, firms on the receiving end have in turn increased the total volume of business opportunities by marketing across industrial boundaries. This increased flow-through offsets some of the uncertainty created by disintegration. Simultaneously, it increases the advantages of spatial agglomeration.

Given that a substantial proportion of filming occurs outside the metropolitan area, in effect the reagglomeration of employment and establishments means that Los Angeles is the headquarters and technological center for an industrial complex that has the whole world as its back lot.

We have asserted a strong relationship between production organization and location. Since we have generally associated the recent vertical disintegration of the motion picture industry with spatial agglomeration, the question naturally arises as to why the studios agglomerated in Los Angeles even when they were vertically

integrated. The answer can perhaps be provided by analogy to the original mass production organizational model, Henry Ford's River Rouge complex in Detroit. Ford was a vertically integrated industrial production company, and it concentrated virtually all of its operations in one metropolitan region. Only later did it break up the units of the system and spread them into different regions. In both River Rouge in Detroit and the studio system in Los Angeles, firms could have the advantages of integration and the conveniences of agglomeration in one place. This was due to the fact that both were very special kinds of oligopolies, concentrated oligopolies, in which price-competition was very limited and significant barriers to entry on the part of competitors existed. Markusen (1985) shows that a high level of spatial concentration typically accompanies this sectoral economic structure, with very little development of the industry in other regions or even in its host region's hinterland.

There was also an intra-metropolitan dimension to the locational behavior of these concentrated oligopolies. River Rouge, though within the Detroit region, was a suburban industrial complex, providing Ford with the advantages of large land parcels at low prices and complete control over the physical arrangement of the production process. The major studios, too, located in suburban Los Angeles. MGM located in Culver City, and many of the other studios are in the San Fernando Valley. Hollywood proper was home to only a few studios, most of whom eventually moved to the Valley (Warners and Paramount). It was not the geographical center of production. Instead, it was the center of movie premieres (like its east coast counterpart, Times Square), a social center for the movie industry (now displaced by Beverly Hills), a

residential center for stars, agents, and executives, and a center of smaller firms, largely subcontractors. Most television network production facilities followed suit by locating in the San Fernando Valley.

In the auto industry, Ford decentralized some of their facilities from the Detroit region when conditions became slightly more competitive in two respects: prices and product differentiation. This is analogous to what occurred in the motion picture industry between 1948 and 1965. The motion picture industry, however, actually never exhibited this type of locational behavior. The studios did make a number of attempts to reassert and enlarge their markets during the 1960s, but they failed at doing so. We can only speculate as to whether, had they succeeded in reestablishing the basis for production on a larger scale, they would have moved some of their production facilities outside of Los Angeles like other routinized manufacturing industries. Indeed, there continues to be speculation today that some of the major studios will merge and establish production centers in other states.

The motion picture industry went directly toward vertical disintegration and "re-agglomeration" in Los Angeles. The smaller businesses in the industry are highly agglomerated at the intra-metropolitan level, too. 65% of the industry's establishments aside from the major studios are located within the Hollywood district, with the second largest cluster in the San Fernando Valley. This contrasts to the location of sound stage capacity, of which Hollywood has only 13%, Culver City 20% (MGM), West Los Angeles 15%, and 50% in the San Fernando Valley.⁸

We propose that the logic by which different forces affect

organization and location is not one described in terms of a natural cycle of industry growth and locational behavior, with flexible specialization as its penultimate stage. Organizational and locational outcomes are subject to multiple contingencies. We call attention to two critical junctures in the development of the contemporary motion picture industry at which things might have turned out differently. The first came with the U.S. v. Paramount decision in 1948, which began the process of vertical disintegration by forcing the studios to divest themselves of their captive theater chains. The second came in the 1960s, when the studios attempted to save mass production by moving into television. They failed at reasserting mass production, but nonetheless restored some of the viability of big studios. At the same time, they decisively turned the industry in the direction of greater vertical disintegration.

Thus far, we have outlined the locational logic of firms and relations between units of capital in the production system. There is another major reason for a vertically-disintegrated industry to take an agglomerated form: the securing of labor and the reproduction of the labor supply. Next, we some of the specific local labor market dynamics associated with the flexibly specialized industry and how they reinforce the industry's tendency to concentrate in one primary region.

4. LABOR AND AGGLOMERATION

4.1 Search and Rehire

Most work in the motion picture industry is of a short-term contractual nature; individual workers experience considerable

variation in the amount of work they are offered, and considerable uncertainty as to how much they will be offered in the future. Most experience frequent periods of unemployment and when work is abundant, many accept overtime work as a strategy of hoarding wages against an uncertain future (Storper and Christopherson, 1985a).

There are several ways that the regional concentration of labor supply helps these workers to overcome problems of instability and uncertainty, thus allowing them to remain in the industry's labor pool and contributing to the reproduction of the workforce over time. These mechanisms can be briefly characterized as follows:

Workers have important reasons to agglomerate, because they offset the instability of short-term contractual work via the pooling of employment opportunities within the industry. These are a form of localization economy;

Workers and employers have mutual reasons to agglomerate to offset instability, because different industries with similar labor demands concentrate in space and thus create a larger pool of job opportunities. These are urbanization economies.

Both of these sources of labor agglomeration are manifest in job search and rehiring. As noted, many workers in the motion picture industry face frequent, intermittent unemployment because the industry depends increasingly on short-term contracts and workers have multiple employers or their employers have multiple clients. This disintegrated structure transmits uncertainty downward through the business hierarchy, and that uncertainty is ultimately visited upon the workforce itself.

The concentration of a large number of industry employers in Los Angeles (or New York) is a vital link in this process. The larger the

overall demand for labor (which is a function of the quantity of industry establishments and the level of their activity located in the regional labor market), the greater the chances that a worker will be able successfully to search for and secure short-term positions. Of course, most workers in this industry -- whether above- or below-the-line -- do not participate in anything approaching an open labor market. They secure positions through well-established networks of contacts or through institutional means such as the roster system. Even these networks, however, can only channel the work that is available. So, the higher the proportion of the industry's work that is concentrated in the region, the more chances there are for the members of search networks to find work (Scott, 1981; Spence, 1981; Stigler, 1961, 1962; Clark, 1983). As a stochastic process, the larger the size of the labor demand pool, the greater are any individual worker's chances of successfully searching for and securing a job (although the aggregate possibilities -- i.e. for the workforce as a whole -- are determined by the ratio of unemployed to job vacancies in the relevant period).

In addition, many of the skills demanded in motion picture production are required in other entertainment industries, such as video, television, recording, and even the stage. To the extent that those industries concentrate in the same places as motion pictures, the workers who possess skills useful in more than one of these sectors will have an even larger pool of chances to secure work. The emergence of an "entertainment industrial complex" in Southern California may be making it easier for the different sectors to offset the risks that increasing instability in any one of them imposes on the workforce.

Most of those with industry-specific skills in the motion picture industry are concentrated in Southern California. Table 14 compares the occupational structures of the motion picture industry in New York, California, and the U.S. California has, by far, the most diverse workforce in that it has a much larger proportion of workers who carry out direct production activities. More detailed breakdowns indicate that New York's professional workers are weighted heavily toward actors and musicians, while California's have a large residual of polyvalently-skilled individuals in technical and managerial occupations (reported in Storper and Christopherson, 1985b). This group is not present anywhere else in the United States. The proportion of maintenance/construction and repair workers is also well above the industry as a whole and much greater than in New York.

4.2 Tendencies Toward Deglomeration of Labor Supply

There are some identifiable tendencies that run counter to this spatial clustering of labor supply. We noted the labor sharing among different industries within the entertainment complex. One major part of this complex is television. Television stations, many of them producing at least some of their own programming, are located in virtually every corner of the United States. Several individuals we interviewed claimed that the skilled workers in the major regional television stations can potentially be tapped for motion picture production. As long as their primary employment is in television (or, recording in Nashville and commercials in San Francisco and Chicago), these individuals do not face the problem of uncertainty, yet they may be able to devote time to the occasional local motion picture production.

The question is whether this process creates the possibility for a spatially-decentralized pattern of the motion picture labor force. In the latter case, the problem of uncertainty would be alleviated by using workers who have primary employment elsewhere (e.g. TV), but on an intermittent basis in the form of supplementary employment. This differs from the spatially-concentrated industry where workers rely on multiple employers in motion pictures but have no "primary" job. Interviews revealed that the most experienced workers in these situations often decide ultimately to move to Hollywood anyway, so as to devote full-time to work in the motion picture industry (Storper and Christopherson, 1985b). By the time the level of motion picture activity in any one of these localities begins to increase to the point that workers are fairly experienced, the same workers face a choice between their primary employment and their activities in motion pictures. Alternatively, if no such level of activity develops even temporarily, these workers may be frustrated by the lack of opportunities to use their newly-acquired skills. At these points, the problem of uncertainty is recreated in the locality: as people are bid away from other jobs, the locality must have a sustained and high level of motion picture production to support them. Since this is rarely possible in these localities, most of these individuals either stay with their original jobs -- thus limiting the quantity of pictures that can be made with local workers -- or migrate to Los Angeles or New York. Paradoxically, it is quite possible that these areas of location shooting are serving as relatively cheap and unregulated training grounds for a workforce that, on the whole, ends up in Los Angeles.

4.3 Spatial Form, Skills and Training

A second major aspect of the agglomeration of labor supply in the industry is the reproduction of skills and norms related to motion picture work. Much above-the-line and below-the-line work in the motion picture industry is highly specific to the industry; there are some roles which have no analogs in other industry, save for electronic entertainment. What role is played by spatial concentration in the development and transmission of these skills?

Many above-the-line workers develop their skills through on-the-job experience, and to get that experience they find it necessary to be in Los Angeles or New York, or in television, commercials, or recording in another city (Storper and Christopherson, 1985b). The question most relevant for the current period is whether the rise of an extremely fragmented industry structure is reducing the effect that the spatial concentration of those responsible for conceiving and packaging projects might once have had on the spatial arrangement of the opportunities for others to gain this experience. In recent years, a number of notable success stories has come from outside Los Angeles and New York as producers and directors conceive and package their own projects, find independent financing and production companies, and only later team up with studios and distribution networks headquartered in the major centers. This phenomenon points to something which has been widely observed in recent years across a range of professional occupations that work essentially on a project-by-project basis (as in consulting or anything with a predominantly evaluative, intellectual, or artistic component): the headquarters location of workers may bear relatively little relation to the location of the "production" phase of the output. Long-distance networks function rather well for these

highly specialized workers. On the other side, successful producers and directors do appear, ultimately, to spend a great deal of their time in Los Angeles.

There may also be an important supply-side pull of above-the-line personnel to Los Angeles and New York. Many of the major television networks and the production companies based in major studios (with multiple production "deals") utilize local networks in soliciting project proposals (concepts, scripts, etc.), and they also listen seriously to the numerous projects which are "pitched" to them routinely. Clearly, there is a close interaction between supply and demand as production companies get ideas from the regional pool of talent and that supply pool, in turn, absorbs and internalizes the norms and priorities conveyed by industry management and attempts to develop acceptable projects. It is logical that the regionalization of these networks is an important factor in the way they operate, and suggests a powerful reason for agglomeration in industries with similar levels of instability, product uniqueness, and R&D- or information-intensity.

More investigation must be done to understand how spatial concentration of above-the-line personnel affects in the spatial concentration of the industry itself.

With respect to below-the-line workers, the skills issue is also complex. The labor process in the motion picture industry involves team work, and so requires both technical and social or normative skills. Workers need to cope with a variety of changing circumstances and all the give-and-take with each other and their superiors that may involve (Storper and Christopherson, 1985a). Some production teams go on

location with workers for whom technically-competent and cheaper replacements would be available in the locality where shooting takes place, because the lead personnel on the teams demand that at least the second-tier technicians be selected from the workforce they know. They can then assume, with some confidence, that these workers will fit into the team and function well under stress. This means that 30-100 technicians go on location from Los Angeles or New York. Given that experience can only be obtained on the job, there is strong reason for the continued spatial concentration of labor supply in the existing centers where that experience can be maintained.

Even though several localities outside New York and Los Angeles -- such as San Francisco and Chicago -- have historically had enough motion picture activity that they develop crews of experienced below-the-line workers, they pose little threat to the concentration of the industry in Southern California. We have already noted the reason for this: these crews are only viable if there is a certain minimum amount of motion picture activity in these localities. Crews in peripheral cities require this minimum but the industry's structure is such as to militate against supporting these crews.

The roles of Southern California and New York in transmitting industry-specific skills -- both technical and normative -- remains very strong. In certain occupations, particularly those related to the management of production facilities, construction of sets, film and tape editing, and cinematography, intergenerational skill transmission within families is important (Storper and Christopherson, 1985a). There are strong social and ethnic connections in certain occupations as well. For above-the-line personnel, "deal making" or entrepreneurial skills seem to be transmitted through social and family networks,

particularly on the Westside of Los Angeles and in the adjoining San Fernando Valley.

We conclude that labor supply and demand interactions in the motion picture industry are bound to a specifically regional labor market, and that they contribute to the increasing spatial concentration of businesses. This vertically-disintegrated industry is strongly bound to its territorial milieu through these dynamics. These comments only begin to suggest the complexity of local labor market structures that might be associated with flexibly-specialized industries; it is a rich ground for further investigation.

5. CONCLUSIONS

In the motion picture industry, vertical disintegration has followed a phase of oligopolistic competition and a production process which in many ways resembled that of mass production. That this occurred should no longer be surprising; instead, it suggests that the notion -- however implicit -- that mass production is the "normal" tendency in sectoral development may be both theoretically and historically incorrect. This is because the advantages to be had from internalizing parts of the production process (and all the risk assumption that implies) and externalizing them (and the loss of control and potential profit centers that implies) shift according to changes in the sector's markets, technologies, labor relations, and so on.

The precise set of possibilities for the evolution of this border envisioned in different industrial organization models depends on the

assumptions we choose to make with respect to technology, factor substitution, information and decisionmaking, etc. One would obviously treat this border quite differently from a neoclassical production function perspective than from a heterogeneous capital framework(cf. Scott, 1983, 1985; Holmes, 1986).

Of equal importance is how the historical possibilities for the development of technologies, markets, and labor relations are envisioned. Prior to the innovation of electronically-guided, programmable industrial machines in certain industries, for example, there was a different set of minimal optimal scales of production than exist now, carrying with them different pressures for product standardization. New technologies change scale-efficiency ratios, just as a different level of mandated job security alters the potential variability of labor inputs and thus the firm's overhead. The historical debates and the theoretical questions are thus intimately connected to each other. Unexpected change in the former force questions about the latter. But the reverse is also true: if the border between firm and market is conceived as a fluid one, then some of the thinking about industrial organization in the post-war period can be brought into question, in particular those models that imply that contractual relationships are likely to be important only in the early stages of a product's life, such as the product cycle.

The vertical disintegration that lies behind flexible specialization has been observed to create powerful agglomeration tendencies at the regional level. Flexible specialization itself leads to the recomposition of the industrial complex, which itself strengthens the forces of agglomeration.

If flexible specialization -- in what would likely be innumerable variants of the system described in this paper -- emerges in other sectors of the manufacturing or producer services economy, then it is likely that significant changes in existing patterns of regionalized or highly-urbanized production, with concomitant patterns of interurban trade and growth transmission, will result. There could also be significant impacts on the international pattern of production and trade, calling into question some of the currently fashionable concepts with respect to an "international division of labor."¹¹ Contrary to those who predicted the steady decentralization of production and relatively greater growth of non-metropolitan areas, we suggest that flexible specialization, particularly in producer services, may be associated with the resurgence of metropolitan growth observed in the U.S. in the 1980s.

NOTES

1 This section owes much to the recent work of Scott (1986) and Holmes (1986), and to many discussions with Allen Scott.

2 The story of the development of vertical disintegration from the studio system is examined in much greater detail in Christopherson and Storper, 1985.

3 "Semi-independent" production companies refers to legally-independent companies who have multiple production contracts with major studios. These companies usually secure these arrangements on the basis of a famous producer or director, and they are guaranteed a certain amount of capital, subject to the approval of the major studio.

4 Information on film-making services and facilities in the Los Angeles region was obtained by using service directories for the industry, including the Hollywood Blu-Book and the Motion Picture Industry Almanac as well as The Production Company. While the firms listed in the Blu-Book and Motion Picture Almanac represent a selective sample of services and facilities, they provide the best historical source available.

In establishing the numbers of firms in each category, we assumed that a firm not listed in the previous period had been established in the interim. We eliminated any duplication in directory listings.

Listings in the following categories of services and facilities were tabulated: Animation; Artists Representatives/Talent Agencies; Editing; Film Effects; Film Processing Labs; Rental Studios; Lighting; Market Research; Production Companies; Properties; Recording and Sound Studios.

5 For example, U.S. studios released 241 new pictures in 1968 and 229 in 1974 (see Storper and Christopherson, 1985b, p. 62).

6 For a complete shift-share analysis of employment, establishment, and payroll data, see Storper and Christopherson, 1985b, Chapter Two.

7 Direct process innovations have been more the consequence of disintegration than cause of it. During the "golden age," few innovations occurred in the studios. With the important exception of sound, many innovations were really just modifications of theatrical products (lighting, stage make-up) to the special conditions of motion picture production. The reputation of each craftsman was based on his knowledge of the equipment he worked with and reliable results. He, in turn would not risk his own reputation by using unfamiliar equipment. Since the only market for new products was the studio itself, there was little incentive to enter and compete in what was an insider's market. The cinemobile, which is one of the major innovations permitting production on location, was first experimented with by independent production companies in the 1970s. The major studios subsequently signed the Cinemobile Corporation as their subcontractor for equipment to go on location. Much the same process occurred with the panaflex camera, which can be easily converted from tripod to hand-held, and is significantly quieter than other types of camera. It was first used by independents and then adopted by the major studios. It can be inferred that the absence of technological innovation during the golden age was related to the dominance of the oligopolistic studios.

8 Figures are from an unpublished market survey carried out by Filmland Corporate Center in 1982. We are not at liberty to publish more detailed data.

9 There are really four basic groups of workers in the motion picture industry. These groups are: managers and administrators of firms in the industry; other professionals involved in product innovation or technical manipulation (in pre- and post-production) or direct creative input in filming or production; craftworkers in the filming phase; and employees of firms providing business services other than in direct production.

Each of these groups is governed by different labor market institutions. Most of the creative and R&D workers -- actors, producers, directors, and writers -- go by the industry appellation of "above-the-line" workers (referring to a location in the film project's budget) and they are members of guilds. Most production craftworkers are members of unions and are called "below-the-line" workers. The other two groups do not have unions or guilds.

10 In the motion picture industry, below-the-line workers in unionized firms gain work through the roster system. Members are placed onto rosters according to seniority. The union acts not simply as a

worker representative, but also as a hiring hall. This is similar to the role assumed by unions in the construction industries in some areas. The roster system thus extends the internal labor market observed in large-scale capital-intensive industries to the external labor market in industries where employment is unstable.

11 Several concepts of international development that are called into question by the advent of flexible specialization. On one hand, some conceptions of the "international division of labor" hold that production systems are become "global assembly lines," in which the production system is organizationally linked but spatially disarticulated. This is made possible because each component source facility produces at a very large scale, making long-distance high-volume transactions possible, as in the oft-cited case of Ford's "World Car."

Flexible specialization is not inconsistent with the developmental outcomes envisioned by Myrdal's circular and cumulative causation theory, but it locates the sources of these outcomes in the organization of production rather than in urban size and the types of skills and other attributes of labor and capital in the developed regions. External economies at the urban level depend on the organization of the production system. Uneven regional development is principally due to production organization rather than the differential status of factor supplies.

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TABLE 1
NUMBER AND PER CENT OF PRODUCTIONS BY ORGANIZATION TYPE,
SELECTED YEARS, 1960 -1980

| YEAR | 1960 | 1965 | 1970 | 1975 | 1980 |
|-------------|-----------|-----------|----------|-----------|-----------|
| Independent | 42 (28%) | 40 (21%) | 93 (44%) | 138 (56%) | 129 (58%) |
| Major | 100 (66%) | 130 (68%) | 96 (46%) | 81 (33%) | 69 (31%) |
| Mini-major | 9 (6%) | 20 (11%) | 18 (9%) | 24 (10%) | 24 (11%) |
| TOTALS | 151 | 190 | 209 | 244 | 223 |

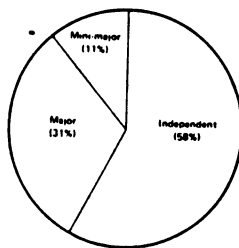
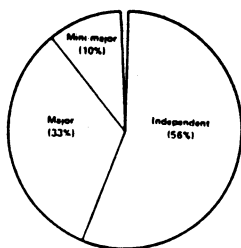
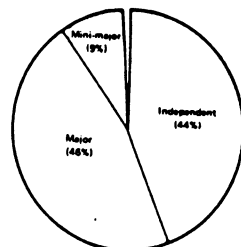
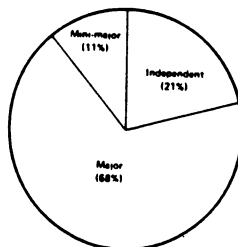
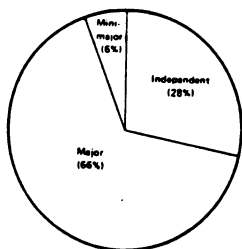


TABLE 2

NUMBER OF LOS ANGELES ESTABLISHMENTS, 1964, 1974, 1982

PRODUCTION FIRMS

| | 1966 | 1974 | 1982 |
|----------------------|------|------|------|
| PRODUCTION COMPANIES | 563 | 709 | 1473 |
| RENTAL STUDIOS | 13 | 24 | 67 |
| PROPERTIES | 66 | 33 | 184 |
| EDITING | 4 | 31 | 113 |
| LIGHTING | 2 | 16 | 23 |

TABLE 3

NUMBER OF ESTABLISHMENTS, 1966, 1974, 1982
POST PRODUCTION

| | 1966 | 1974 | 1982 |
|-----------------|------|------|------|
| RECORDING/SOUND | 20 | 33 | 187 |
| FILM PROCESSING | 43 | 76 | 55 |
| FILM EFFECTS | 10 | 27 | 42 |

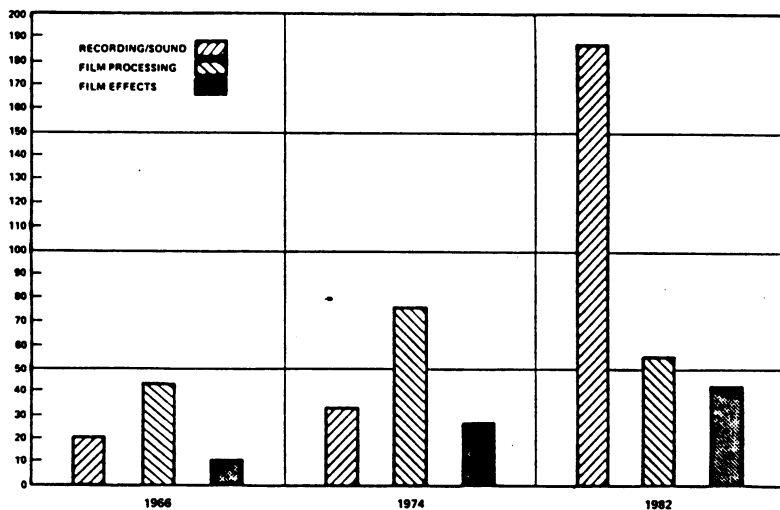
Source: Hollywood Blu-Book & Motion Picture Almanac.

TABLE 4

NUMBER OF LOS ANGELES ESTABLISHMENTS, 1966, 1974, 1982
PUBLIC RELATIONS FIRMS

| | 1966 | 1974 | 1982 |
|----------------------------------|------|------|------|
| MARKET RESEARCH | 3 | 5 | 24 |
| ARTIST REPS & TALENT AGENCIES | 242 | 359 | 344 |

Source: Hollywood Blu-Book & Motion Picture Almanac.

TABLE 5 is in text of paper

TABLE 6

EMPLOYMENT: SIC 7913

| | 1991 | | 1974 | | 1968 | |
|------------|-------|------------|---------|------------|-------|------------|
| | # | % of Nat'l | # | % of Nat'l | # | % of Nat'l |
| CA | 19907 | 73.4 | 9490 | 59.3 | 10252 | 66.3 |
| FL | 149 | .58 | 157 | 1.09 | 193 | 1.25 |
| TX | 368 | 1.4 | 417 | 2.9 | 202 | 1.31 |
| NY | 1979 | 7.3 | 2173 | 15.176 | 2611 | 16.89 |
| IL | 1139 | 4.4 | 500-999 | ----- | 712 | 4.61 |
| NJ | 51 | .199 | 88 | .61 | --- | ----- |
| U.S. | 25611 | 100 | 14319 | 100 | 15461 | ----- |
| TOP STATES | | | | 79.2% | | 85.45 |

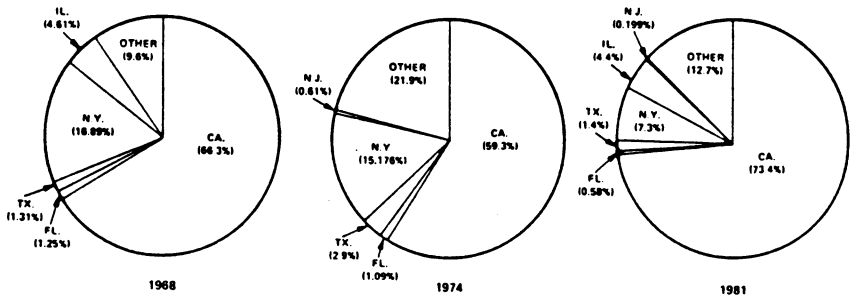
Source: County Business PatternsSOURCE COUNTY BUSINESS PATTERNS

TABLE 7

EMPLOYMENT: SIC 7914

| | 1969 | | 1974 | | 1991 | |
|------|-------|------------|--------|------------|---------|------------|
| | # | % of Nat'l | # | % of Nat'l | # | % of Nat'l |
| CA | 5197 | 50 | 14 839 | 72.89 | 21626 | 63.2 |
| FL | 160 | 1.5 | 20-99 | | 302, | .88 |
| TX | 193 | 1.76 | 20-99 | .324 | 250-499 | --- |
| NY | 4076 | 39.23 | 2423 | 15.81 | 6755 | 19.7 |
| IL | 178 | 1.7 | 798 | 3.92 | 397 | 1.2 |
| NJ | NA | NA | NA | NA | 130 | .38 |
| U.S. | 10388 | 100 | 20359 | 100 | 34226 | 100 |

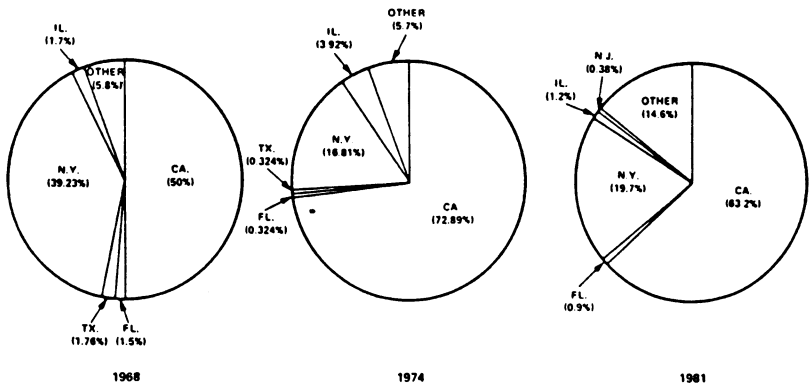
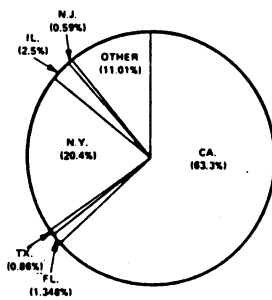
Source: County Business Patterns

TABLE 8

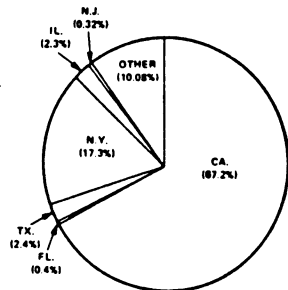
EMPLOYMENT: SIC 7319

| | 1991 | | 1974 | |
|------------|-------|------------|-------|------------|
| | # | % of Nat'l | # | % of Nat'l |
| CA | 12205 | 67.2 | 9663 | 63.3 |
| FL | 73 | .4 | 206 | 1.348 |
| TX | 437 | 2.4 | 131 | .86 |
| NY | 3135 | 17.3 | 3110 | 20.4 |
| IL | 426 | 2.3 | 382 | 2.5 |
| NJ | 95 | .32 | 90 | .59 |
| U.S. | 18169 | 100 | 15274 | 100 |
| TOP STATES | | 89.92% | | 99% |

Source: County Business Patterns



1974



1981

TABLE 9

ESTABLISHMENTS: SIC 7913

| | 1968 | | 1974 | | 1981 | |
|------------|------|------------|------|------------|------|------------|
| | # | % of Nat'l | # | % of Nat'l | # | % of Nat'l |
| CA | 263 | 39.5 | 534 | 41.9 | 414 | 40.5 |
| FL | 12 | 1.9 | 33 | 2.6 | 19 | 1.96 |
| TX | 14 | 2.1 | 36 | 2.9 | 25 | 2.4 |
| NY | 199 | 29.9 | 303 | 23.7 | 214 | 20.9 |
| IL | 18 | 2.7 | 53 | 4.1 | 57 | 5.6 |
| NJ | -- | | 24 | 1.9 | 17 | 1.7 |
| U.S. | 666 | 100 | 1279 | 100 | 1023 | 100 |
| TOP STATES | | | | 77.9 | | 70.96 |

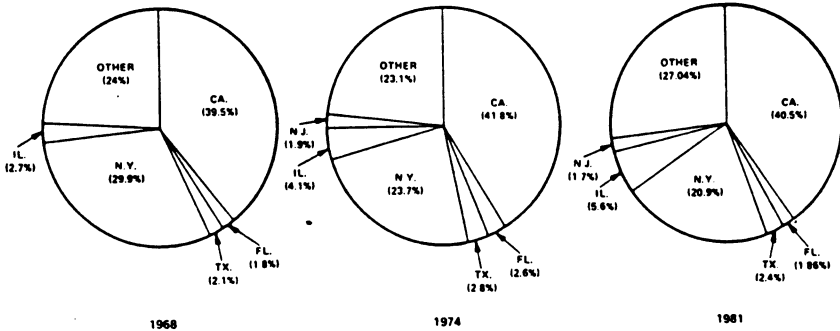
Source: County Business Patterns

TABLE 10

ESTABLISHMENTS: SIC 7914

| | 1969 | | 1974 | | 1981 | |
|------|------|------------|------|------------|------|------------|
| | # | % of Nat'l | # | % of Nat'l | # | % of Nat'l |
| CA | 193 | 40.4 | 409 | 41.8 | 607 | 48.4 |
| FL | 12 | 2.45 | 12 | 1.23 | 25 | 1.76 |
| TX | 10 | 2.04 | 17 | 1.74 | 44 | 3.10 |
| NY | 175 | 35.92 | 306 | 31.29 | 311 | 21.9 |
| IL | 20 | 4.09 | 46 | 4.7 | 39 | 2.7 |
| NJ | | | NA | | 21 | 1.5 |
| U.S. | 490 | 100 | 973 | 100 | 1420 | 100 |

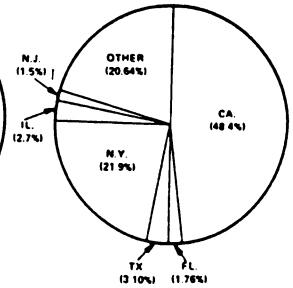
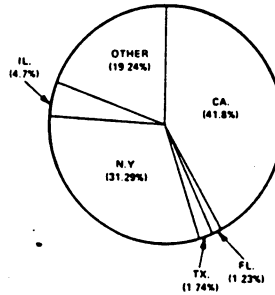
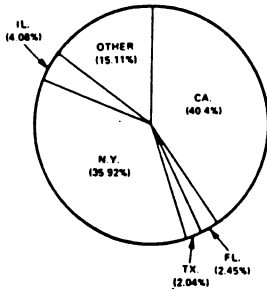
Source: County Business Patterns

TABLE 11

ESTABLISHMENTS: SIC 7819

| | 1981 | | 1974 | |
|------|------|------------|------|------------|
| | # | % of Nat'l | # | % of Nat'l |
| CA | 536 | 49.9 | 294 | 39.7 |
| FL | 11 | 1.02 | 14 | 1.9 |
| TX | 29 | 2.6 | 13 | 1.9 |
| NY | 289 | 26.8 | 233 | 32.5 |
| IL | 33 | 3.06 | 36 | 5.03 |
| NJ | 21 | 1.9 | 12 | 1.7 |
| U.S. | 1077 | 100 | 716 | 100 |

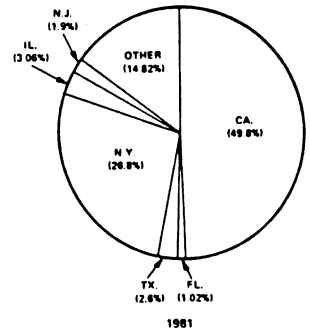
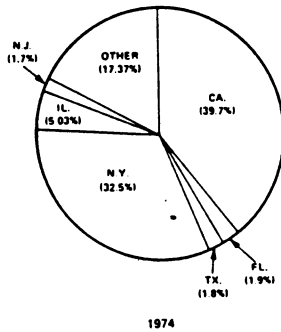
Source: County Business Patterns

TABLE 12
EMPLOYEES PER ESTABLISHMENT

| SIC 7913 | 69 | 74 | CHANGE * 59-74 | 91 | CHANGE * 74-81 |
|----------|-------|-------|-------------------|-------|-------------------|
| CA | 38.98 | 15.89 | 40.76 | 45.42 | 285.94 |
| NY | 13.12 | 7.12 | 54.26 | 8.78 | 123.31 |
| FL | 16.08 | 4.75 | 29.53 | 7.78 | 163.78 |
| TX | 14.42 | 11.53 | 80.3 | 14.72 | 127.11 |
| U.S. | 23.21 | 11.19 | 48.2 | 25.04 | 223.77 |

SIC 7914

| | | | | | |
|------|-------|-------|--------|-------|--------|
| CA | 26.25 | 36.28 | 138.20 | 31.48 | 86.76 |
| NY | 23.15 | 11.18 | 48.29 | 21.72 | 194.27 |
| FL | 13.33 | NA | NA | 12.08 | NA |
| TX | 18.3 | NA | NA | NA | NA |
| U.S. | 21.2 | 20.82 | 98.2 | 24.10 | 115.75 |

SIC 7919

| | | | | | |
|------|----|-------|----|-------|--------|
| CA | NA | 34.02 | NA | 22.77 | 66.93 |
| NY | NA | 13.34 | NA | 10.85 | 81.33 |
| FL | NA | 14.7 | NA | 6.64 | 45.17 |
| TX | NA | 10.07 | NA | 15.60 | 154.91 |
| U.S. | NA | 21.33 | NA | 16.87 | 79.09 |

Source: County Business Patterns

* First year = 100

TABLE 13

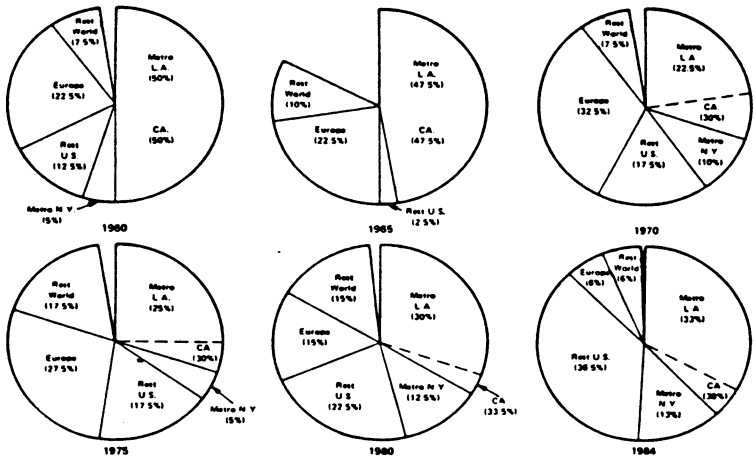
Location of Production Activity *

| YEAR | METRO LOS ANGELES | CALIFORNIA | METRO NEW YORK | REST U.S. | EUROPE | REST WORLD | TOTALS |
|---------------------|----------------------|---------------|-------------------|---------------|---------------|---------------|----------------|
| 1960 | 50% (74) | 50% (74) | 5% (7) | 12.5% (19) | 22.5% (33) | 7.5% (13) | 97.5% (151) |
| 1965 | 47.5% (93) | 47.5% (93) | 0 (0) | 2.5% (7) | 22.5% (43) | 10% (19) | 92.5% (190) |
| 1970 | 22.5% (49) | 30% (62) | 10% (19) | 17.5% (36) | 32.5% (67) | 7.5% (7) | 97.5% (209) |
| 1975 | 25% (64) | 30.0% (91) | 5% (10) | 17.5% (44) | 27.5% (67) | 17.5% (43) | 97.5% (244) |
| 1980 | 30% (65) | 33.5% (74) | 12.5% (27) | 22.5% (55) | 15% (33) | 15% (34) | 97.5% (223) |
| 1984 | 33% (68) | 39% (79) | 13% (29) | 36.5% (76) | 6% (13) | 6% (13) | 99.5% (209) |
| EXCLUSIVE LOCATIONS | | | | | | | |
| 1994 | 31% (39) | 38% (48) | 14% (18) | 40.5% (51) | 3% (4) | 4.5% (6) | 100% (126) |

*Source: Daily Variety
Our calculations

Numbers in parentheses are actual # films

Total percentages may be less than 100 where some films were not classified. Totals may be greater than the sum of classified films because many films are classified more than once, as they have several locations.



*SOURCE: DAILY VARIETY - OUR CALCULATIONS

TABLE 14
 OCCUPATIONAL STRUCTURE, SIC 791
 U.S., CALIFORNIA, NEW YORK, 1978

| | <u>US</u> | <u>CA</u> | <u>NY</u> |
|--|---------------|---------------|---------------|
| Managers & Officers | 13.87 | 9.9 | 11.09 |
| Professional Workers | 36.5 | 33.2 | 52.96 |
| Technical Workers | 7.85 | 7.3 | 2.78 |
| Service Occupations | 2.67 | 5.9 | 1.43 |
| Clerical Occupations | 20.45 | 17.3 | 22.83 |
| Sales Occupations | 2.31 | 1.2 | 2.71 |
| Maintenance, Construction repair, material handling & powerplant | 16.36 | 25.1 | 9.05 |
| | <u>100.00</u> | <u>100.00</u> | <u>100.00</u> |

Source: Occupational Employment Statistics, States and U.S. Dept. of Labor