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LOCATIONAL PRINCIPLES GOVERNING GUILD INDUSTRIES: THE CASE OF VIOLINMAKING*

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The locational principles governing guild-type industries are sought using violinmaking as an archtypical guild industry. The economic and non-economic characteristics of guilds lead to the expectation of a market oriented distribution. The persistent guild characteristics of violinmaking are enumerated, and the locational history of violinmaking is traced, beginning with the development of the violin family in Northern Italy c. 1550. The changing distribution of violinmaking is related to changes in market conditions as well as changes in the economic, political, religious, and social environment. The high degree of locational stability, as measured by correlation coefficients, in the face of constantly changing distribution of markets, is related not to inertia, but to mystique. The notion of mystique, or subjective evaluation of handcrafted product, is seen as a key modification of an otherwise market orientation expectation. Mystique permits a classification of possible location for violinmaking. As would be expected from classical location theory, linkages of several types exist. Preliminary findings for other guild industries substantiate the market-mystique explanation as a valid one for understanding the location of guild industries.

Geographers have continuously sought to understand the changing distribution of industry. As such the mechanistic, least-cost approaches to industrial landscapes of the late 19th and early 20th centuries have been refined to include concepts such as possible changes in spatial supply and demand, amenities, pricing systems, and satisfier models. A distinction is now made between locational decisions made by firms and by various types of corporations. In this article another type of industrial organization is discussed as a factor influencing the changing pattern of industrial location. The specific type of organization is that of the guild; the specific product line is the production of violins, violas, celli, and basses, known generically as violinmaking.

Craft guilds were the dominant near universal form of industrial organization until the Industrial Revolution (Lambert, 1891; Morse, 1966; Chicherov, 1971). Although the number of guilds which have survived is limited, there have been periodic calls to return to the guild system as a way of improving product quality and offering alternatives to required school attendance (Pentz, 1919; Ryan, 1935). It is then of historical, contemporary and theoretical interest to know what locational principles governed the distribution of guild industries. In this article this problem will by analyzed against the background of location theory. First the characteristics of guilds will be enumerated, then an expected distribution of guilds hypothesized; sources of data and their use will be presented; the locational history of violinmaking and specific factors influencing the locational history explicated;

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and finally the implications of the guild pattern for the hypothesized distribution will be set.

GUILD CHARACTERISTICS

Craft guilds have two sets of characteristics, economic and non-economic, which will influence the spatial distribution of guild craftsmen. The economic characteristics include the legal basis for the guild, the limitation of craftsmen, and trade regulation. The non-economic characteristics include the religious, charitable, and fraternal functions performed by guilds.

The most important economic characteristic of guilds is the basis of its authority: the guild was a legally sanctioned monopoly, with a charter issued by a local political authority. By definition then, a guild could only be found in an incorporated settlement (Gross, 1980; Kellenbenz, 1976). In return for this monopoly the guild was expected to insure the orderly supply of goods, and be subject to the scot and lot system, viz., be prepared to help local authorities raise money when needed (Gross, 1980).

The next important characteristic is that membership in a guild was limited to a master who was a legal resident of the incorporated settlement where the charter was issued. Access was further limited by use of the apprentice system. Masters were limited in how many apprentices and journeymen they could have in their employ, the terms of apprenticeship regarding length of service, hours, and salary, and the place of origin of apprentices, natives being preferred (Beard, 1930; Lambert, 1891; Seligman, 1887).

Finally guild members had to subscribe to guild regulations regarding dues, trade, and work. Dues were set in the form of initial membership fees and annual fees. Trade regulations were designed to insure the quality and quantity of goods promised to the consumer. Specific areas regulated included who could buy what raw materials, in what quantities, at what price, and at what rate of discount; who could sell, terms of payment, and limitations on bringing manufactured goods from one place to another. Restrictions were placed on advertising. Work regulations involved limitations on how many hours a day a master could work, and the number and type tools a master could own. Violations of the trade and work regulations made the master subject to fines (Gross, 1890; Kellenbenz, 1976; Nussbaum, 1933; Renard, 1919; Unwin, 1904).

Although not set by regulation there are in addition several work related characteristics of guilds to note. First, the manufacturing process was labor intensive. Second, within the work process there was limited room for originality in either use of new materials or designs. Both of these characteristics had as a major aim the maintenance of quality standards.

The non-economic characteristics of guild were not as spatially limiting as the economic characteristics. They nevertheless are important as they were tied to the life of the guild and town. Frequently guilds had religious affiliations, such as having a patron Saint or particular church where guild sponsored masses were held. Further the guild had a paternalistic, charitable aspect: it took responsibility for bearing the costs of funerals for members, while widows and orphans were supported by guild funds, and dowries were funded by these same funds. Beyond these narrow charitable roles, the guilds usually contributed the town-wide charities aimed at helping the sick and the poor. Finally, there was a fellowship characteristic to guilds: periodic feasting and drinking provided a social life for guild members (Lambert, 1891).

HYPOTHESIZED DISTRIBUTIONS

Given the above guild characteristics what would the expected distribution of the various crafts guilds be? This question can be approached both empirically and theoretically.

By definition we would expect guilds to be town oriented: they were located where their charters were valid. It can be noted in this regard that the demise of the guild monopolies are associated with the outmigration of disenchanted journeymen and entrepreneurs to areas outside the incorporated settlements. Although the need for more open space and better sanitary conditions have been cited as major reasons for this outmigration, the major motivating factor was the desire to escape the rigid and confining guild regulations on trade and employment (Nussbaum, 1933; Seligman, 1887; Unwin, 1904).

In contrast a purely raw material orientation would be limited to those guilds using raw materials which were perishable, those which were subject to signigicant weight loss in the manufacturing process or where the raw materials of a specific quality were spatially limited. Of these three possibilities, the latter is most improbable; as we shall see for many guilds, what constitutes quality raw materials involves a highly subjective definition.

Beyond these mechanistic, empirically derived hypotheses, there are several more theoretical expectations. First, the craft guilds functioned in an economic environment build on local and regional not national economies (Nussbaum, 1933; Unwin, 1904). Hence a market or town orientation is to be expected. Further, the goods produced by guilds were both convenience and shopping goods. That being the case market orientations are to be expected, with the notions of hierarchical ordering of goods at play. In addition, many of the goods were high value added items: empirical studies have shown that these types of goods are produced by industries concentrated in market areas (Latham, 1978; Pred, 1965). Finally, we can note that guilds were founded on the notion of product specialization. That being the case, craftsmen would have to be in close proximity to the presumably numerous supplies of several component items in any given craft process. Again this would suggest that craft guilds would be market oriented, and that the distribution should match the patterns of spatial demand, especially in the period before the 17th century, when the distinction between craft and merchant guilds was small if not non-existent.

There is one qualification which must be kept in mind when reviewing the case study which follows against these theoretical and empirical expectations. We must recognize that we are often dealing with a one man firm making a locational decision. This is a situation which Hamilton (1974, p. 1) had described as one where the "choice of a location is often a non-issue; not only is his (the entrepreneur's) location in effect fixed, but often the question of *any* location, let alone any *alternative* location never enters his mind..." Further, Hamilton (1974) notes that in such a situation there are good reasons for home town locations: communications are primitive, spatially restricted and regimented, personal contact patterns are confined to a small area. We are dealing with them in the realm of true micro-economic activity.

CASE STUDY: VIOLINMAKING

Violinmaking was chosen as a case study to test the above expected notions influencing the distribution of guilds for several reasons. First, violinmaking is one of the few manufacturing systems to be basically run along guild principles throughout its history. All the guild characteristics enumerated above are found in violinmaking.

It is interesting to note that violinmaking developed as a guild industry when the guild system in general was in decline, and when new industries in particualar were opting for

other forms of organization (Kellenbenz, 1976; Nussbaum, 1933). Why has violinmaking been able to maintain the guild system to the degree it has? One factor is the superiority of the product coming from a violin maker's shop in comparison for factory violins (Nussbaum, 1933). Another factor was that violinmaking was too marginal in economic importance to be subject to political pressure: Nussbaum (1933) has hypothesized that the shift to the industrial system for many goods was forced by the rulers of many European states in order to increase tax revenues. The mass production of stringed instruments did not carry the potential of substantially increasing tax revenues. Nevertheless attempts were made to make violinmaking less labor intensive through the use of both factory and *verlag* (putting out) systems. Major centers using these systems are Mittenwald, Markneukirchen, Mirecourt, and Shoenbeck.

Finally, the late appearance of violinmaking may have shielded it from many of the excesses of older guilds resisting change. Violinmaking did make room for subspecialization, such as bridge, peg, and string production; entrepreneurs were accomodated with the development of a wholesale and retail sales system. Some violin makers actually preferred to sell only through authorized sales agents. Violin makers engaged mainly in repair work frequently sell instruments made by others, obtained from wholesalers. In short, the organizational flexibility of violinmaking increased the longevity of the guild system. A second reason for using violinmaking as a case study is that an adequate data base exists for reconstructing a locational history. The data are found in several dictionaries-encyclopedia of violin makers. These works are catalogues of labels inserted in violins by the makers. Most commonly the label specifies who made the instrument, when, and where. Not infrequently the maker would also indicate who his master teacher had been.

There are however, several drawbacks to using these data. There are a series of bewildering mistakes and inconsistencies: names are misspelled, dates do not agree, familial relations are confused, locations either incorrect, missing or vague, and antiquated place names are used. There is also a double count problem: a violin maker is often reported to be in more than one place at the same time. Finally some violin makers did not insert labels in their instruments, while others deliberately put in false information regarding either the maker, the date, or the place of production. All of these deliberate falsifications were designed to increase the sales value of a given instrument.

The data for this paper were collected from three dictionary-encyclopedia (Hawies, 195-; Henley, 1959-60; Vannes, 1951). A basic list of violin makers were compiled from Hawies, and expanded with data from Hanley. When the names, date or places of work were not the same in these two works, Varnes was consulted. Using this method complete data on 7,443 violin makers were collected; data were incomplete for an additional 1,011 violin makers in regards to place of work and/or dates and they are omitted from the study. In collecting these data no distinction was made between violin maker, repairman, or bow makers, all carrying the generic term violin makers (french, *luthier*). No distinction was made between professional and amateur violin makers.

Once collected, the violin makers were grouped by place and their work spans classified using 25 year time spans for 1600-1900. An additional category was used for those violin makers active before 1600; 1924 was used as the cutoff for data analysis as data on contemporary violin makers are very incomplete. Incomplete data occur for three reasons. First, there is a normal time lag before violin makers are well known enough to be included in formal dictionaries. Many violin makers active in 1924 have still to be included in such dictionaries. Second, many violin makers died in combat during World Wars I and II. Third, the post World War II political division of Europe compounded the dislocation of the industry

which war losses produced. It is only in the late 1960's that some semblance of geographical order has returned to violinmaking in all of Europe.

A violin maker was assigned to a time period regardless of how many years in the time period he actually worked; if a violin maker worked in more than one place in a given time period he was counted as working in all the places of employment. The data so collected and classified are mapped in Figures 1-5. Table 1 shows the total number of violin makers in

Figure 1

each of the study periods. Table 2 shows the total number of violin makers by period and location. The locational types are derived from subjective evaluations of violin quality as passed down by historians of the instrument (Farga, 1969; Nelson, 1972; Raynor, 1972; Wechesberg, 1973). Instruments made in prime centers were always considered the best instruments, although individual violin makers may be in or at of favor at certain times. Prime centers start at the beginning of violin making history, or soon after, and have world-wide markets. *Verlag* centers feature machine or mass produced instruments. Regional centers feature makers preferred in that region, but rarely known outside their region. Ephemeral centers feature amateur or poor quality professional makers, most commonly using local materials, with poor quality instruments generally resulting.

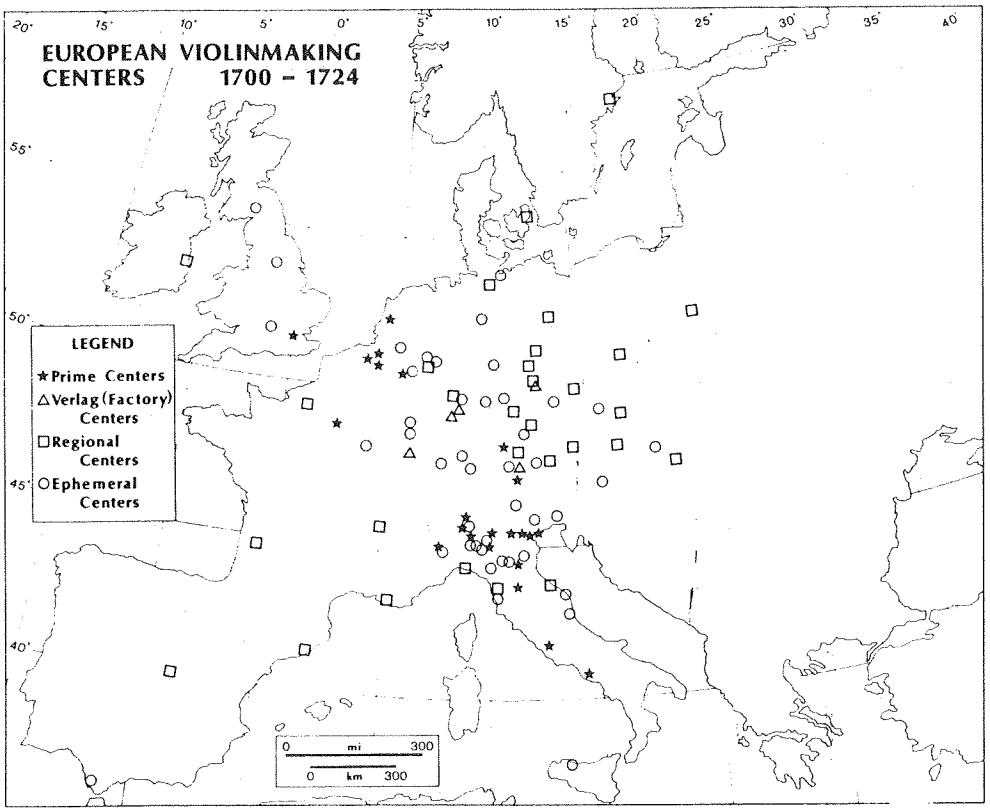

Figure 2

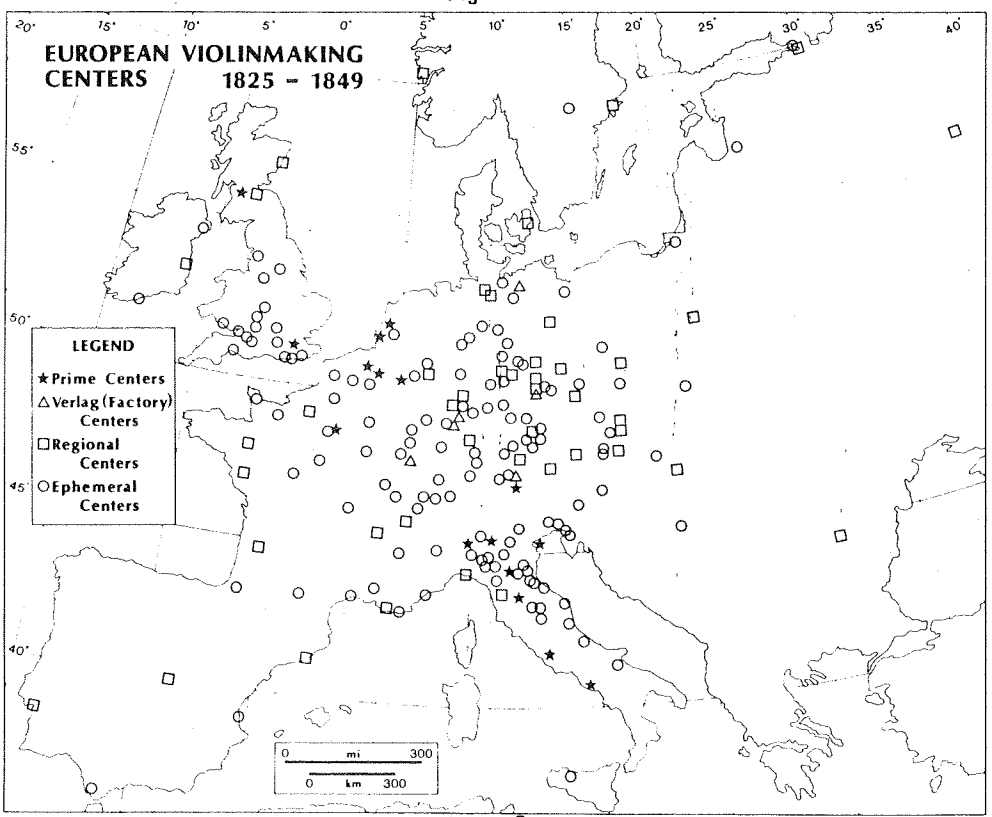

Figure 3

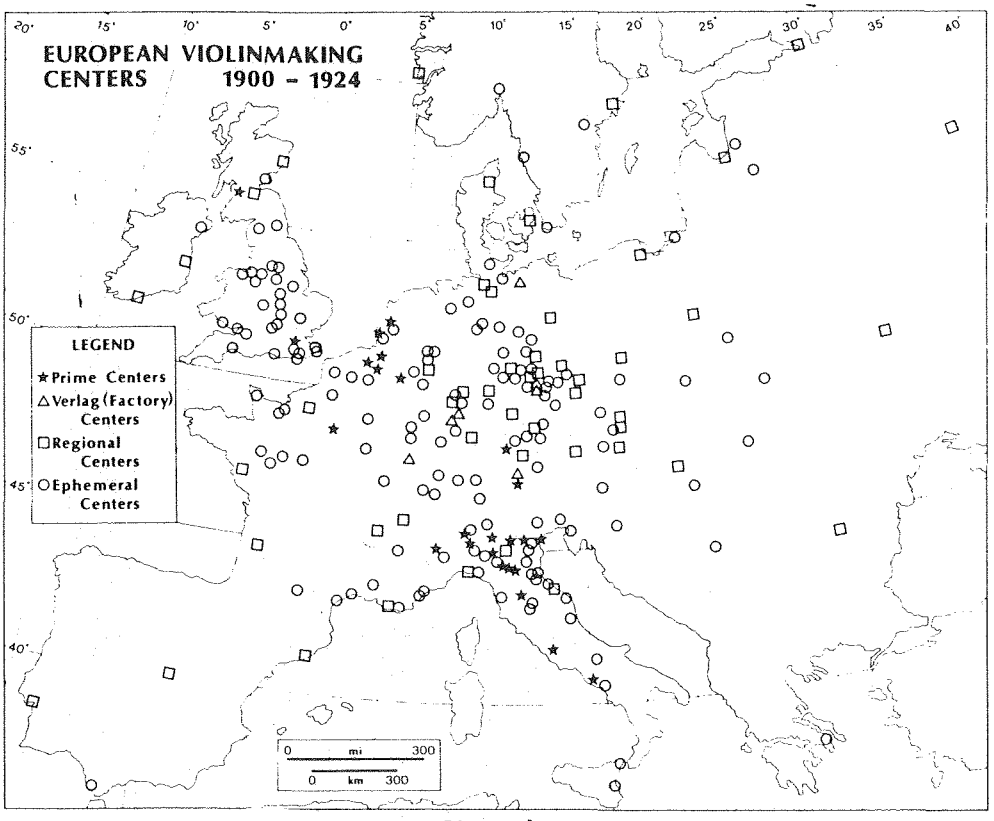

Figure 4

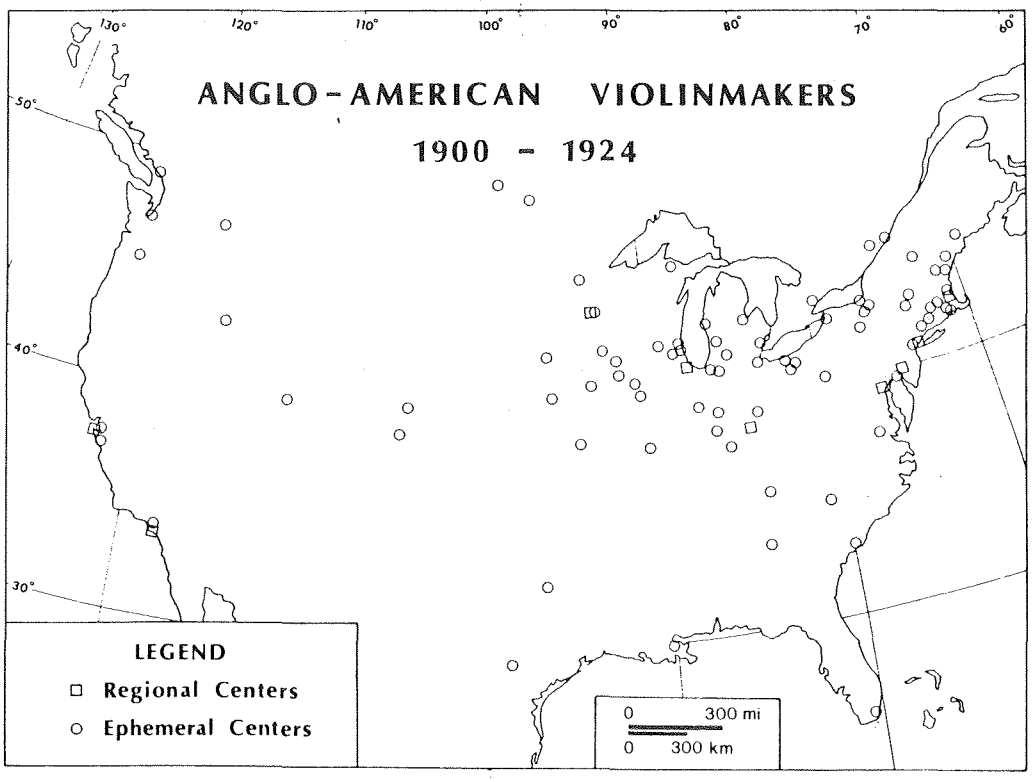

Figure 5

Table 1: Number of Violin Makers by Time Periods

Time-Period	Number	Time-Period	Number
pre-1600	66	1750-1774	1091
1600-1624	73	1775-1799	1113
1625-1649	115	1800-1824	1075
1650-1674	213	1825-1849	995
1675-1699	309	1850-1874	1167
1700-1724	506	1875-1899	1701
1725-1749	749	1900-1924	2291

Source: Compiled by author from Hawies, 195-; Henley, 1959-60; and Vannes, 1951.

Table 2: Violinmakers by Type of Violinmaking Centers

Center	Pre 1600	1600-1624	1625-1649	1650-1674	1675-1699	1700-1724	1725-1749
Prime*	49 (14)	48 (17)	78 (20)	129 (21)	189 (20)	233 (19)	333 (22)
Verlag**	1 (1)	1 (1)	9 (3)	19 (6)	39 (5)	86 (8)	159 (8)
Regional	16 (12)	19 (14)	21 (16)	53 (29)	69 (37)	144 (46)	161 (53)
Ephemeral	--	5 (4)	7 (5)	12 (12)	12 (10)	41 (33)	95 (65)

Table 2 (continued)

Center	1750-1774	1775-1799	1800-1824	1825-1849	1850-1874	1875-1899	1900-1924
Prime*	406 (21)	390 (22)	365 (19)	304 (21)	308 (22)	381 (22)	513 (23)
Verlag**	315 (8)	358 (8)	261 (7)	230 (7)	210 (7)	284 (7)	384 (7)
Regional	218 (52)	213 (57)	218 (53)	227 (58)	293 (61)	444 (61)	535 (51)
Ephemeral	152 (93)	152 (95)	231 (143)	234 (140)	356 (176)	592 (321)	859 (346)

*Includes Amsterdam, Antwerp, Augsburg, Bolognia, Brescia, Brussels, Cremona, Florence, Glasgow, The Hague, Innsbruck, London, Milan, Modena, Munich, Naples, Paris, Rome, Turin, Venice Verona, Vienna.

**Includes Graslitz, Klingenthal, Lubeck, Markneukirchen, Mirecourt, Mittenwald, Neukirchen, Schonbeck.

( ) Number of Centers.

Source: Compiled by author from Hewies, 195-; Henley, 1959-60; and Vannes, 1951.

LOCATIONAL HISTORY

The locational history of violinmaking summarized in the figures is the result of the interaction of a number of processes. There is a basic underlying diffusion mechanism at play. There are three basic diffusion patterns: from the Brescia-Cremona area in northern Italy to France, the Low Countries and the United Kingdom; from Innsbruck to central and eastern Europe under the influence of Stainer c. 1638; and finally the European Overseas Expansion (Wechesberg, 1973).

The success of the diffusion process was dependent upon the acceptance of the violin as an instrument for both professional and amateur use, the disruption of local and national economies by war, the changing role of music in the Roman Catholic and Protestant Churches, religious persecutions during the Reformation and general world economic-trade conditions (Farga, 1969; Nelson, 1972; Poules, 1973; Raynor, 1972; Scholes, 1934). In general large metropolitan, political, and cultural centers supported violin makers, as well as selected, almost random, small centers. A strong coastal pattern developed especially in France and Italy. During the mid and late 19th century there was a major expansion of the craft with the coming of a generation of amateur violin makers, especially in the U.K. and Sweden.

The European expansion had a remarkably limited effect on the distribution of violinmaking. With the exception of Anglo-America, there are few other violin makers outside the Old European core (Table 3). The Anglo-American pattern of development strongly parallels the European experience. After a rural beginning in New England, violin making centered in the major eastern and midwestern political, economic, and cultural centers. As heavy migration developed in the late 19th and early 20th centuries immigrant violin makers not only settled in these major centers, but also in more rural areas. As this immigrant generation died out, and further migration slowed, a general consolidation in the overall distribution took place. Persistently isolated makers tended to be associated with a major music school. Occasionally new amateurs appeared especially in rural areas.

Table 3: Violinmaking Centers Outside of Europe and Anglo-America

Place	1800-1824	1825-1849	1850-1874	1875-1899	1900-1924
Auckland				1	1
Brisbane	1	1	1	1	
Christchurch			2	4	5
Melbourne			3	12	17
Sydney			1	3	7
Wanganui					1
Capetown				1	4
Cairo					5
Constantinople					3
Tel Aviv					1
Buenos Aires				5	11
Kingston, Jam.					1
Mexico City					2
Rio de Janeiro					1
San Jose, Costa Rica					1
Manila					1
Nagoya				1	1
Singapore				1	1
Tokyo			1	1	2

Source: Compiled by author from Hawies, 195-; Henley, 1959-60; and Vannes, 1951.

Two possibly complimentary explanations can be used to explain the slow initial growth of the Anglo-American industry. First, it could be argued that Puritan attitudes towards music were so negative, that music in general, and violin making in particular, had to await a more secular, open society. But the Puritan attitude toward music and its impact on musical life are by no means straightforward or clear. Alternatively then, a resource argument can be constructed. Mueller has argued that the industry grew slowly because of the absence of imperial or private orchestras, the lack of early prosperous crossroads of commerce such as Hamburg or Leipzig, the absence of sumptuous baroque traditions associated with the Catholic Church, and because in the colonies no established Protestant Church had the resources to hire a Bach, to draw on a reservoir of trained musical personnel, or to establish orphan schools for specifically training choir boys (Mueller, 1951). Public concerts only began in the 1730's in Boston, New York, and Charleston, and in 1757 in Philadelphia (Mueller, 1951).

LOCATIONAL PRINCIPLES

Given the locational history of violinmaking, what have been the locational principles which have governed the distribution? The maps and the above discussion strongly point to a market principle orientation. Before concluding that the discussion regarding expected distribution of guilds is complete and correct, a detailed explanation of the market orientation is necessary.

An important first qualification to the market principle deals with the violin making centers labeled Ephemeral. They are of course serving local markets. However they also have a strong raw material orientation which is lacking for all the other centers. There are several possible explanations for this. First, what constitutes fine raw materials, and whether raw materials are in fact crucial to the crafting process has been widely debated among violin makers. Second, there appear to have been political and religious restrictions on locating violin makers in the two prime raw material areas, eastern Europe and Switzerland. In eastern Europe an absentee nobility has been used to explain the relative lack of violin makers. In Switzerland the strong anti-musical views of Calvin and Zwingli have been cited as the reasons for a retarded violin making industry there (cf. Raynor, 1976; Scholes, 1934).

A second qualification to the market concept is the lack of direct proportionate relationship between the number of violin makers in a place and the population. This is especially true for the Prime centers: the average estimated population for the Prime centers is approximately 5.1 percent of the total European population; yet the average percent of violin makers in these centers is 26.4 percent. This disproportion is found throughout the history of violin making. This excessive concentration suggests that different types of centers served different types of markets: Prime centers served all markets, local to international, as did *verlag* centers; Regional centers served national and regional markets, whereas Ephemeral centers served only restricted local markets. An alternative explanation might be that there were more people playing stringed instruments in the Prime centers. Such a view is not supported by the history of violin making literature.

This disproportionate distribution and the notion of a hierarchy of markets served does not strictly conform to our theoretical expectations. What seems to be lacking in general location theory of industry then is the notion that quality of a product can be important and influence the long term stability of an industry such as violin making (Tables 3 and 4). This stability is not related to industrial inertia but rather to mystique, the subjective evaluation of the quality of a product. Despite the fact that populations have shifted and the definition of what a fine instrument is has changed, mystique and persistant concentration are found.

Table 4: Rank Order Correlations: Number of Violin Makers by Place for Succeeding Periods

Pre-1600 - 1600-1624	0.495
1600-1624 - 1625-1649	0.672*
1625-1649 - 1650-1674	0.707*
1650-1674 - 1675-1699	0.666*
1675-1699 - 1700-1724	0.729*
1700-1724 - 1725-1749	0.779*
1725-1749 - 1750-1774	0.755*
1750-1774 - 1775-1799	0.789*
1775-1799 - 1800-1824	0.698*
1800-1824 - 1825-1849	0.762*
1825-1849 - 1850-1874	0.732*
1850-1874 - 1875-1899	0.808*
1875-1899 - 1900-1924	0.804*

*Significant at 0.001 level.

The notion of mystique can be used to classify violin making centers. Superior instruments by definition come from Prime centers; *verlag* by definition does not produce superior instruments, but the product is Good or Acceptable; Regional centers produce Good instruments; finally, Ephemeral centers have the lowest overall ratings, although occasionally a good instrument is produced by a local amateur.

There is of course an obvious implication for the violin maker: location in a center will influence if not determine the chances of attaining fame and financial success. This point perhaps is best demonstrated by the establishment of a "model school" for violin making founded in 1937, the bicentenary of A. Stradivari's death. Stradivari's home of Cremona was chosen as the best possible location. More recently violin makers in Rome, Milan, Cremona and Venice formed a new formal guild confident that their location was both a necessary and sufficient condition for the reestablishment of the former centers (Farga, 1969).

Returning to theoretical expectations again, we can note that closely associated with the distribution of violin makers is the more limited distribution of producers of products anciliary to violin making, including such things as strings, bridges, pegs, varnish, and cases. These products were produced in a very few, restricted specialized places, often in either the Prime of *verlag* centers. Frequently these ancillary products were but a part of a larger product line serving other industries such as cabinetmaking (Hart, 1909; Vaillet, 1936).

SUMMARY AND CONCLUSIONS

One case alone does not prove that the distribution of guild industries can be explained using location theory. It is suggestive. Further work is necessary. Such work will be limited by the relative lack of data on the locational histories of guilds. Preliminary finds on other guilds do confirm however that location theory is useful, when modified with the concept of mystique, for explaining guild distributions. For example, data from Dolge (1972) shows that around 1900 the piano industry was heavily concentrated in Berlin, London, Vienna, Chicago, and Paris: these five cities accounted for 46.23 percent of all piano makers, but only 3.13 percent of the total European and United States population. Firms supplying piano makers with parts were even more concentrated: 62.5 of the suppliers were found in the above five cities. Similar patterns can be found for European, Chinese and Japanes potters, Anglo-American silversmiths, and United States glassblowers (Burton, 1968; Cutten, 1952; Jenyns 1971; Litchfield, 1953; Munsterberg, 1957; McKearin, 1946 and 1966; Thorn, 1947; Yutaka and Wilson, 1973).

Our study does indicate however that the concept of market is not merely an abstract aggregated population with a given level of purchasing power. Rather, market is a concept of selective demand for an item related to life styles, and cultural definitions of acceptable means of self-development and entertainment. Finally, industrial location is not necessarily a neutral cost-related type of decision making. Some places are clearly preferred regardless of costs or situation. The location of guild industries in this respect is similar to the locational pattern of corporate headquarters: the prestige or mystique of a place influences how the final product will be evaluated and received in the marketplace.

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