Refreshing the typology of migration systems.

A reformulation based on the case of early nineteenth-century Geneva.

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Abstract

After several decades of debate, historians have now largely established that large scale mobility already existed before the urbanization and the so-called modernization of Western societies. At the same time, most classical studies have successfully based their analyses of global population mobility on the theory of systems. This approach was introduced by the works of Charles Tilly in the 1970s and later on popularized by Leslie Page Moch. Unfortunately, the typology they proposed does not account for the diversity of systems highlighted in recent studies. Does this weakness jeopardize the whole theory? In 2002, Lesger, Lucassen & Schrover proposed a "tri-nominal typology", to more efficiently capture this diversity through the dimensions of *space*, *time,* and *mode*. The present paper assesses the relevance of this new framework by applying it to the case of early nineteenth-century Geneva. The results partly validate the model, but also call for an important adaptation. Circular and step migration should be distinguished by means of a fourth dimension, the *destination* of return migrants. Moreover, several techniques are considered to complete the "user manual" of the new typology. Firstly, log-linear models appear as the best method to analyse the destination of return migrants. Secondly, I argue that *time* should be defined as the intended duration of sojourn, which might be identified by the shape of the hazard of leaving the city. Thirdly, the data available in the case of Geneva suggest that residential distributions can be used to estimate the level of organization of each system.

Key words: historical demography, migration history, migration system, log-linear model, return migration

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I. Research framework

Roughly until the 1980s social sciences were dominated by structural explanations of human behaviour and conferred macro structures primacy over individual actions. Applied to migration, structuralism underscored the macro-economic and social forces that were responsible for throwing masses of migrants on the roads. However, many criticisms rose in the 1980s, arguing that the dominant School was reducing individuals to atomic particles victims of their time. During the period of transition between the former dominant structuralism and the new life course paradigm that is now prevailing in turn since the 1990s, the fact that the systemic approach was making possible the coexistence of individual agency and a broader societal and economic context made it especially attractive. This is obvious in the definition of demographic system proposed by Livi-Bacci as "the combination of demographic behaviours according to rules and relationships that are stable over time. (…) Interdependent relationships constitute the system." (Livi-Bacci 1999:147). The systemic approach was especially successful in explaining the coexistence of different demographic regimes, and their symbiosis with migration systems (Bideau 1996; Oris 2003). In a major contribution to migration history, Leslie Page Moch conceived migration as "a socially constructed, self-perpetuating system that includes homes and destination - a responsive system that expands, contracts, and changes according to circumstance" (Moch 1992:16). Those circumstances, as she showed in her book, are mainly related to structural changes in the economy and the institutions of Modern Europe[1]. However, she did not overlook the multitude of individual actors: "if we focus on the macroeconomic level alone, we lose the actors who are essential to this drama, dismissing their agendas and denying the factor of human agency. If we focus on the personal alone, we miss the opportunity to connect migration with historical change. But when we see both the broader economy and the personal context of migration, our understanding of the process is profoundly enhanced" (Moch 1992:7).

Over the last two decades, migration systems never disappeared of the theoretical framework of migration studies, but macro factors lost somehow the central place they had in the works of the pioneers. More attention was brought on personal characteristics, such as gender, age, or civil status, in the process of formation of the individual migration patterns. Although migration systems have provided one of the most useful frameworks to explain the main streams of human mobility, the importance attributed to macro and micro factors clearly evolved in the favour of the latter. A danger of this evolution is that by increasingly focusing on the specificities of each case, the scientific

discourse progressively looses the general picture of European migration history. For this reason, a coherent and complete typology of migration systems remains of great importance.

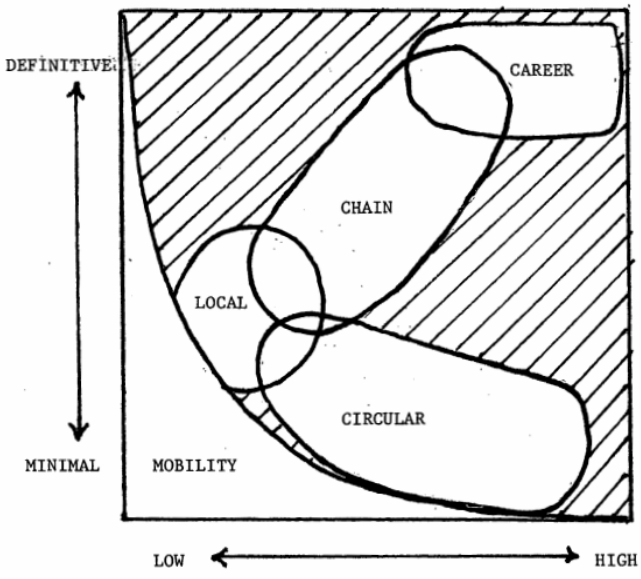
If the concept of migration system is recognized, the same is not true anymore for its typology. During two decades, from the late 1970s to the late 1990s, scholars were satisfied with Charles Tilly's typology (see Tilly 1978 discussed extensively in the next section). Over time, more and more concerns were raised about this framework though, which was considered as incomplete and fuzzy. Still now the debate on the formulation of a better typology of migration systems is not closed. This lack of confidence in a potentially outdated typology could jeopardize a synthetic understanding of migration patterns at the European level and their evolution on the long run. Eighteen years after Leslie Page Moch's *Moving Europeans*, and taking account of the newest research, migration history has to be able take a step back and see again the global picture. And this global picture can only be drawn if one is able to identify the major forms of systems and regroup similar cases into a single coherent story.

In the next section I will present the current state of the typology of migration systems. Then, I will present a new data source that will enable to enlarge the discussion to the case of mid-nineteenth-century Geneva. Finally, I will use this point of comparison to evaluate how the existing typology can be adapted in the light of this case.

II. Previous research

Migration systems have been described in numerous ways, although the formulation of a universal typology has remained a permanent work in progress. For a long time, Charles Tilly's four *standard patterns* have been accepted as a satisfactory classification despite some simplistic aspects. In 1978, Charles Tilly published what can be considered as one of the first attempts to list the major types of migration systems (Tilly 1978)[2]. He proposed the following diagram (figure 1) in which the horizontal and vertical axes represent respectively the distance travelled by the migrants and the extent to which social ties are broken by the migration.

Figure 1: Four Standard Migration Patterns



Below a certain (undefined) level in those two dimensions, Tilly considers moves as general "mobility" and therefore excludes them from the study of migration patterns. From this very basic definition, he extracts four *standards migration patterns*. Surprisingly, those categories of migration systems are not defined based on the two scales presented in figure 1, but are given rather *ad-hoc* definitions (see box below).

Charles Tilly, Migration in Modern European History, 1976

Page 5-6
Local migration shifts an individual or household within a geographically contiguous market - a labor market, a land market, or perhaps a marriage market. In local migration the distance moved is small by definition; the extent of break with the place of origin is also likely to be small. On the whole, the migrant is already quite familiar with the destination before making the move; he or she therefore has relatively little learning of a new environment to do after the move.

Page 7
Circular migration takes a social unit to a destination through a set of arrangements which returns it to the origin after a well-defined interval. Seasonal work on harvests, pastoral transhumance, the sending of young people into domestic service before they marry and the circuits of Alpine villagers who served long years in the lowlands as schoolteachers, soldiers or craftsmen before their long-planned return to the mountains with the accumulated capital all represent variants of circular migration.

Page 8
Chain migration moves sets of related individuals of households from one place to another via a set of social arrangements in which people at the destination provide aid, information and encouragement to new migrants. Such arrangements tend to produce a considerable proportion of experimental moves and a large backflow to the place of origin. At the destination, they also tend to produce durable clusters of people linked by common origin. At the extreme, they form urban villages.

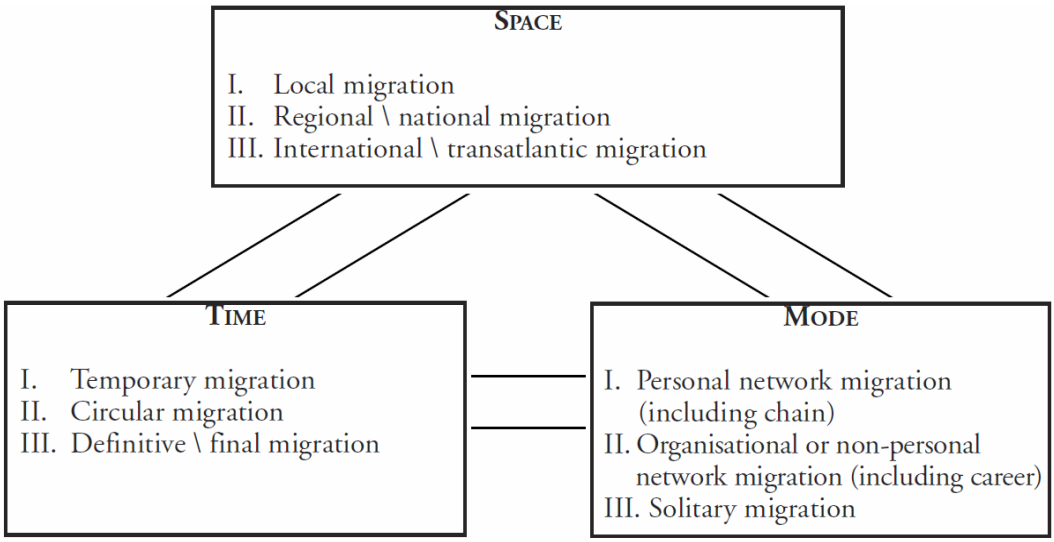
Page 9-10
Career migration, finally, has persons or households making more or less definitive moves in response to opportunities to change position within or among large structures: organized trades, firms, governments, mercantile networks, armies and the like.

Although Tilly's classification might seem apparently quite adapted to the description of migration systems, it becomes rapidly problematic. First, we notice a clear overlapping of the different types. For instance, circular migration shares common traits with chain migration in the sense that they both rely on strong social ties between sending and receiving communities. This does not seem to be a problem for Tilly, who acknowledges himself that "(…) the types overlap. They sometimes change from one to another. For example, most systems of circular migration leave a residue of migrants at the destination. (...) In another overlap, local migration systems sometimes provide the basis for long-distance chain migration" (Tilly 1976:11). He even argues that "the rough classification of migration into local, circular, chain and career does not exhaust the significant distinctions one might

make. For example, it catches quite imperfectly the important difference between individual and collective migration; although on the whole chain and circular migration less frequently involve single individuals than do local and career migration, there are individual and collective versions of all four types" (Tilly 1976:13).

Leslie Page Moch, in her *Moving Europeans*, did not seem disturbed by these issues and even adopted Tilly's categories as a central piece of her methodological framework. She considered them as "especially useful for a long-term historical study" (Moch 1992:17). Over time though, the weaknesses of Tilly's categorization seemed to bother a growing number of scholars, who could not fit their observations into one of the four categories. For instance, but not only, scholars working on the Dutch cities of Rotterdam and Utrecht highlighted an important population of German bakers who "moved in a much more solitary fashion to the Netherlands than is accounted for in the model of chain migration" (Lesger, Lucassen, and Schrover 2002:30). Confronted with an excessively rigid model, and instead of desperately "stretching" Tilly's definitions[3], they preferred suggesting a new typology that would include the four pre-existing categories. Before building a more coherent model, they extensively argued why they couldn't use Tilly's definitions. They argued that "the root of the problem is Tilly's typology itself. It is composed of unlike quantities: *local migration* refers to distance (space), *circular migration* to the time that migrants stay in their new surroundings, and *chain* and *career* migration to the mode of migration. We therefore propose to distinguish between at least three separate but interrelated dimensions of migration, each with its own typology" (Lesger, Lucassen, and Schrover 2002:31). Figure 2 presents the "tri-nominal" typology that the authors suggested.

Figure 2: A tri-nominal typology of migration, by Lesger, Lucassen, and Schrover



Source: (Lesger, Lucassen, and Schrover 2002:31)

This new typology provides a clearer and more complete tool than Tilly's classification, but its operationalization is no longer as straightforward. Whereas Tilly restricted his typology to four categories recognized by the majority of scholars, the tri-nominal typology opens a very wide range of possible combinations without considering if they are really observed. In orther words, it looses in simplicity of operationalization what it gaines in inclusion, and thus tends to become a very complete but sterile concept. Still, the tri-nominal typology deserves to be tested in other contexts than the Netherlands. The 2002 reformulation was essentially driven by the urge of the authors to split the *Mode* dimension into three categories, in order to capture solitary migrants, which is perfectly justified. It is likely that other cases will highlight other dimensions, or suggest alternative methods of operationalization.

III. Research question

The short literature review above highlighted a general feeling of discontent with the existing typologies of migration systems. Tilly's four standard patterns are clearly too restrictive regarding the variety of forms of migration highlighted. On the other hand, the tri-nominal typology proposed in 2002 constitutes an interesting attempt to include other patterns, but it has never been tested in another context than two Dutch cities.

The aim of this paper is twofold. On one hand it will be investigated how the tri-nominal typology should be operationalized. As sophisticated as it can be, this concept would stay sterile without a "user's manual" suggesting efficient tools to measure the characteristics of the systems in each of their dimensions. Concurrently, in an incremental spirit, the addition of the case of nineteenth-century Geneva should bring us closer to a point of saturation, where all important dimensions are included. Since those two goals are intimately related, they should not be answered separately, but rather simultaneously.

Concretely, for each of the three dimensions defined in figure 2, we will aim to find a technique to practically describe the migrants who come to Geneva in the mid-nineteenth century. If needed, we will also suggest possible modifications to the typology. The degree of success of this procedure should provide a better statement on the applicability of the typology, and therefore on its potential for future research.

IV. Data

Data sources for the study of migration history are scarce and often limited in time and space. The residence permits of the city of Geneva (1837-1843)[4] offer a chance to explore the migration history of an early nineteenth-century old European urban centre. This source has several advantages over

the traditional censuses or even the population registers. In brief, while the former suffer from being cross-sectional and are therefore missing an important part of migrants (mostly seasonal) and moves (short term and repeated), the latter are limited in coverage both in time and space. Indeed, a serious drawback of population registers is that they were not generalized before the 1860s, and were first available only in a handful of European states such as Germany, Italy, Belgium, or the Netherlands (Kertzer and Hogan 1985; Lesger, Lucassen, and Schrover 2002).This limitation is of major importance since it has been recognised now that large scale migration started before the industrialization and did not uniquely originate in a "Modernization" of the society (e.g. Bade 2003; Hochstadt 1999; Jackson and Moch 1989; Lucassen 1999; Lucassen and Lucassen 2009; Moch 1992). Indeed, several studies have pointed out that early nineteenth-century populations experienced mobility at remarkable pace and magnitude, but the lack of data available prior to the second half of the nineteenth century is still a factor of limitation. In this context, the residence permits in general (Lorenceau 2001), and in particular in Geneva appear as a very interesting source for the study of urban migration thanks to their early introduction, although we should bear in mind that it does not offer a perfect substitute for the population registers (Remund 2010).

Residence permits were probably introduced in Geneva at the end of the eighteenth century (Engeli and Marin 1974; Schumacher 2010). The series were perturbed during the French occupation although they were never completely disrupted until at least the end of the nineteenth century. Residence permits were provided by a special chamber on the presentation of three certificates of origin, of good conduct, and of self subsistence, and had to be renewed every third month. They were required for both Swiss citizens and foreigners given the rather loose ties that bounded the cantons within the Swiss confederation until 1848. Between 1816 and 1837, domestic servants were the only people released from the obligation of the permit. This restriction was then eliminated for married servants and for males the following year. Until the new 1844 law, female servants stayed uncovered (Schumacher 2010), which probably constitutes the most important weakness of the source. Besides that, one can identify two major problems in terms of completion of the entire migration life course. Firstly, the permits do not provide any information regarding the previous migration history of immigrants. In these conditions, it is not possible to determine if Geneva is the first or the twentieth city that the migrants meet on their way; if the time an individual spends in town represents a unique event or is part of an endless pilgrimage over Europe. Secondly, in the absence of information about the population of origin, it is not possible to test which kind of selection process is working. In other words, all research questions such as the motivations of migration, that is to say all questions that require comparing the migrants to their counterparts who stayed in their home regions, are strongly limited, if not totally impossible (Remund 2010). However,

residence permits are surely accurate enough to describe migration flows to and from the city, and provide precious pieces of information about the migrants that help evaluating the characteristics of the migration systems they belong to. The individual information available on the migrants include their names, sex, age, marital status (including names of spouse and children), place of origin, occupation, as well as the number of renewals of their permit[5], and the successive addresses in town.

A previous analysis (Remund 2009) has shown that in 1840s Geneva immigrants typically came from four main regions, each of them being a potential migration system. Two short distance migrants' groups were present: local ***Swiss Protestants***, coming mainly from the neighbouring canton of Vaud, and the equally neighbouring catholic ***Savoyards***. These groups accounted respectively for 15% and 30% of the immigrants in the register[6]. Two longer distance systems completed the picture: ***Germanics*** (both Swiss and future German[7]) and ***French***, accounting respectively for about 30% and 15%. The remaining 10% were composed of other French-speaking Swiss cantons and rare origins. It has been shown that French protestants have been massively present in Geneva for religious reasons since the sixteenth century (Perrenoud 1979). In the 1840s, these religious motivations seemed to be still present, but the increasing proportion of French Catholics indicated an increasing importance of economic-motivated migration. The Germanic population was probably taking part in the same movement of population that pushed millions on the road in a period in-between the German demography recovery from the huge loses of the Thirty Years' War and the industrialization that permitted the absorption of this important work force. We can see signs of this flow from Germany in France (Hatt-Diener 2004), in Switzerland (Lorenceau 2001), and especially in the Netherlands (Lesger, Lucassen, and Schrover 2002; Lucassen 1987). Finally, Savoyards, as Catholics, were not easily accepted in Geneva, but their presence increased throughout the nineteenth century.
In the analysis that follows, those four distinct migration flows will be considered as four potential migration systems with their own internal logics. Their characteristics will be studied in order to see if they fit to the typology proposed by Lesger, Lucassen and Schrover in 2002.

V. Results and discussion

As it was announced above, we will proceed by taking each dimension of the tri-nominal typology at a time and discuss its operationalization. In this process, some questions will occupy us longer than others.

i. Distance

Because it seems a rather straightforward concept, distance does not call for a long discussion. We should however bear in mind that different definitions of distance have been applied to migration

studies. Obviously, the easiest way to measure the distance travelled by the migrants is to calculate the straight line between origin and destination. This is the method chosen for instance by Oris for the city of Liège (Oris 1990), and Lorenceau, when he defines the threshold for local migration at 60 km around Basel (Lorenceau 2001). Beside the question of choosing a meaningful threshold, this method of course implies several heavy assumptions such as the absence of geological barriers (mountains, lakes, see, etc.), the uniformity of political boundaries, and a cultural homogeneity (Bell, Blake, Boyle, Duke-Williams, Rees, Stillwell, and Hugo 2002). One might want to correct the straight line direct measure by using travel time or costs. However, in the absence of such measures, one has to admit that the straight line method is often the only available for historians. In brief, there is not much more here to add to a debate that probably has no definitive answer.

ii. Mode

The level of organization of the system is a concept that refers to the strength of the social network of the immigrants. This social network is supposed to be particularly strong in the case of chain migration, which is relying according to Tilly on "a set of social arrangements in which people at the destination provide aid, information and encouragement to new migrants" (Tilly 1976:8). One of the problems of this definition, as we have seen previously, is that migrants can travel long distances without being part of a strong social network (Lesger, Lucassen, and Schrover 2002). One could also imagine that circular systems depend on relationships with people in the host community. It is thus reasonable to allocate a separated dimension to the mode of migration, independently of the distance traveled or the length of the stay.

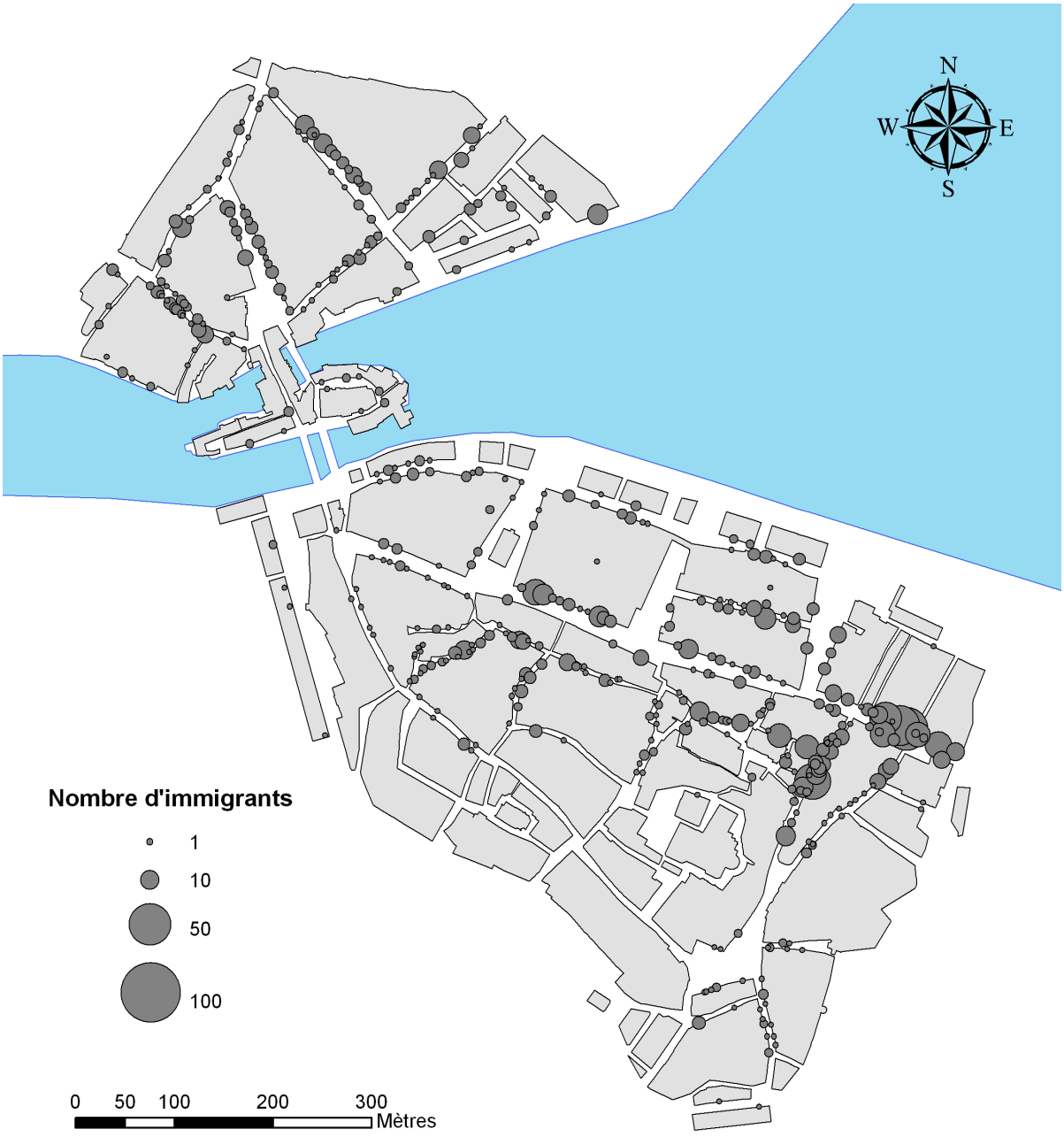
The level of organization of a migration system is however a difficult concept to measure. Ideally one would need qualitative sources such as in-depth interviews, or if the actors are not available, familial correspondence or personal diaries. In the absence of these testimonies, historians typically study the level of marital endogamy. Marriage is in this sense a sign of the type of relations natives maintain with immigrants. Concerning the case of Geneva, a strong tendency to endogamy was highlighted (Ryczkowska 2003:92). This was especially true for the natives already in the first decades of the nineteenth century. In the second half of the century, with the increase of migration flows that made easier to find a spouse from the same origin, endogamy became also common for foreigners, especially among the Savoyards (Ryczkowska 2003:93). In brief, "union in nineteenth-century Geneva was a good mean to reinforce someone's roots, more than integrate in the host society" (Ryczkowska 2003:127).

Marriage is certainly a clear sign of the relationships between migrants and their host communities, but it is applicable only to the minority of long term migrants who end up settling down. An

interesting alternative that encompasses all migrants consists in comparing the characteristics of the migrants and their hosts in order to understand the nature of their relationship. In the study of Rotterdam and Utrecht, Lesger, Lucassen and Schrover compare maps of place of origin and occupation of migrants (2002, cf. Appendix). They also cross the information about the place of origin and occupation of the immigrants and the head of the household in which they are declared. This method enables them to highlight "groups of people form a well-defined restricted area of origin, often sharing the same occupation" in Utrecht (Lesger, Lucassen, and Schrover 2002:39), whereas those patterns are absent in Rotterdam. A drawback of this method is the risk of missing a relationship between two immigrants which are not related through a relation of landlord-tenant, but nonetheless support each other in their daily life in town. This would be the case for instance if immigrants that are part of a common network are lodged in the same house although their tenant is a native. The immigrants would then be considered as not part of a network whereas he is actually lodged in the same building as other people from the same origin. In the absence of information about the head of the household, this method is also inapplicable. In order to overcome this problem, the representation of the residential distribution in town may offer an interesting complement. The underlying reasoning would then be that the closer the people live to each other, the stronger support they can provide, which would be a sign of existence of a network and thus a high level of organization in the mode of migration. Alternatively, this can be a sign of rejection from the host society producing a phenomenon of ghetto. The interpretation should take account of the size of the city, the reputation of each of its neighborhoods, and all other available indications.

In the case of Geneva, several maps were drawn based on the immigrants' first addresses of in town. Map 1 represents the overall distribution of all migrants arrived in Geneva between 1837 and 1843. No particular concentration can be observed, while this is not the case on map 2, which is focusing only on the Savoyards. Indeed, Savoyards are concentrated in a specific area in the East of the city, and more precisely in a handful of buildings that provide shelter almost exclusively to this group. In eight buildings in this area, on average 80% of the tenants are Savoyards, accounting for about half of all the Savoyards in town. Such a concentration can only be explained by an active role of the community, probably embodied by the so-called brotherhood "des Trois Couronnés" whose implication in the journey back and forth from the home villages can be traced in local histories (Guichonnet 1945; Meynet 2008). It would not be surprising at all if this guild also provided the housing for the migrants.

Map 1: First addresses in town, all permits (1837-43)

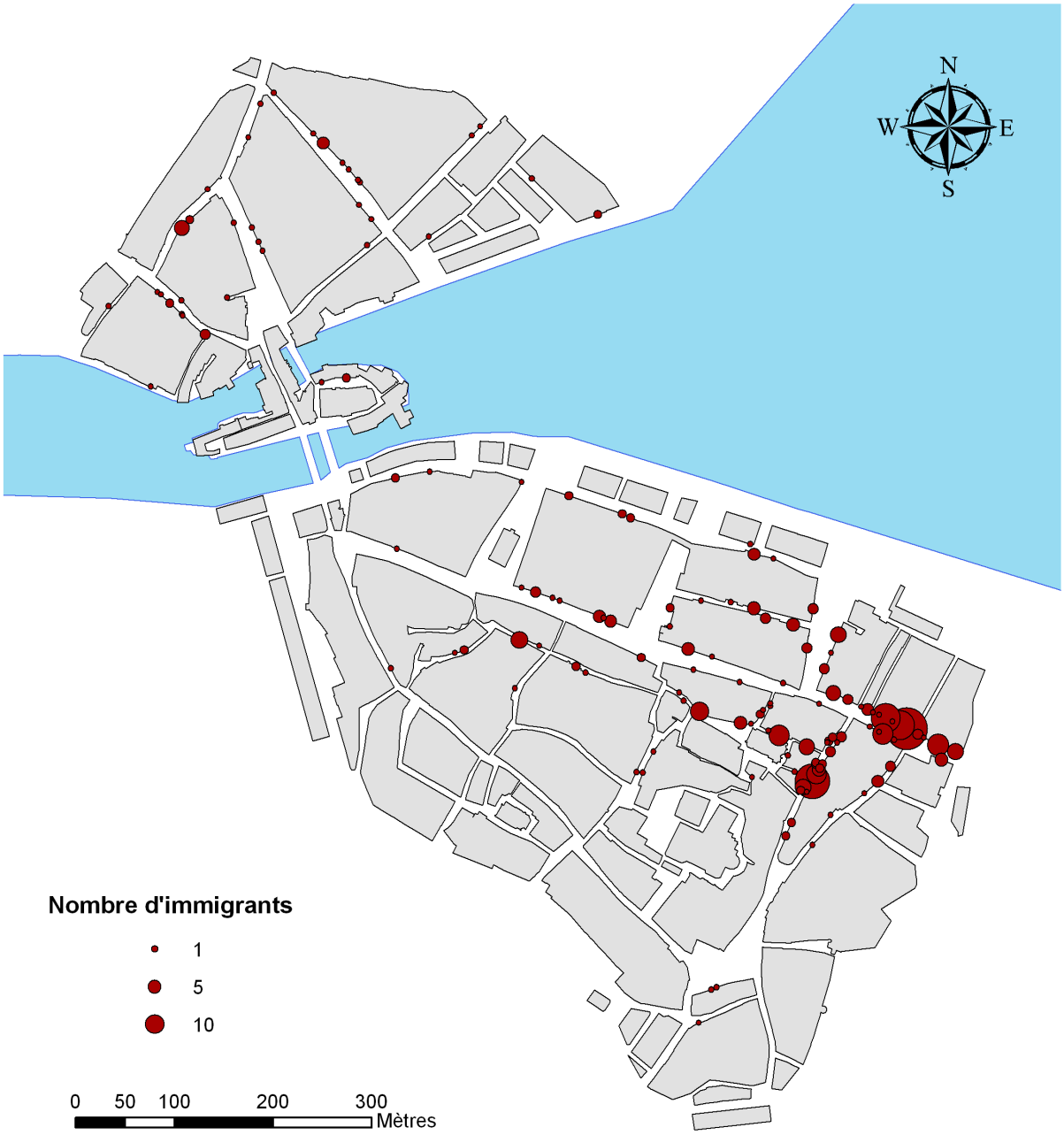


Source: residence permits (1837-1843) and the "Céard" map (1840), (Remund 2009 and www.sitg.ch).

Germans do not gather in town like Savoyards, suggesting a lower level of organization, closer to the case of Rotterdam than Utrecht. It is known however that German-speaking migrants preserved a strong sense of community that often led to violent tensions with natives and other migrants. Examples of street fights involving groups of German immigrants are numerous fir this period (Herrmann 2003). A more qualitative work would be necessary to stress if this apparently strong identity and community solidarity also had influences on the mode of the Germanic migrations. So far, no proves exists that Germanic migrants really helped each other regarding the organization of

their journeys, their employment, or their housing. . In Geneva too, it seems that there is life outside the migrant network.

Map 2: First addresses in town, Savoyards (1837-43)



Source: residence permits (1837-1843) and the "Céard" map (1840), (Remund 2009 and www.sitg.ch).

The cartographic study of the residential distribution seems thus to be an efficient tool to highlight the level of organization of migration systems. Moreover, the *Mode* dimension makes sense and allows considering types of migration systems where migrants do not receive help of their community.

iii. Time

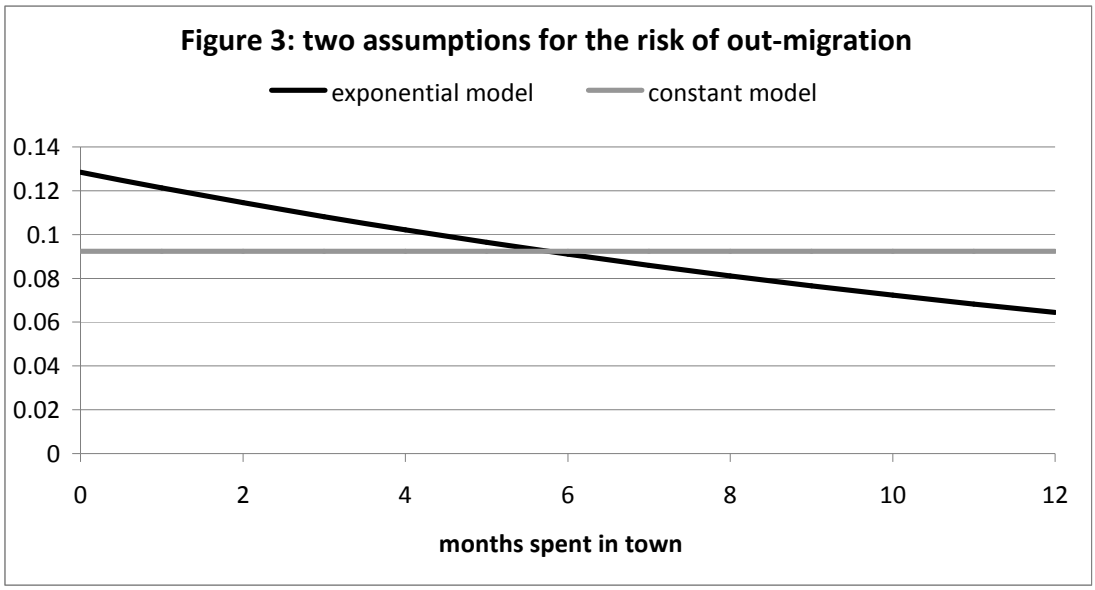
Time is a more delicate dimension to operationalize for two reasons. First, the authors of the tri-nominal typology do not provide an exact definition of what they consider as *Time*. One could think of at least two different notions, namely the time spent out of the sending community and the time spent in each of the receiving community. Those measures do not automatically coincide, particularly in the case of a step-wise process, during which the migrant moves from one town to another until he / she comes back home. Secondly, the inclusion of the category *circular migration* in the *Time* dimension is problematic. Indeed, the term circular refers to the path followed by the migrant; more precisely it raises the question of the return migration. The question of whether the migrants go back home after each period on the road (typically the seasonal workers) is a different one than the time they spent on the road. It seems therefore a good idea to split the two questions in two dimensions in the typology. In addition, it would have the positive side-effect of distinguishing between step migration and circular migration. Step migration, a well known pattern of migration which consists in migrating from villages to small towns, to bigger towns, and only eventually reaching the biggest cities. Tilly himself acknowledges this omission when he writes that his classification "does not easily separate two rather different relationships between a major city and its hinterland: the rare pattern in which migrants come directly to the city from the distant countryside, and the common pattern in which country people move to nearby small towns, small town people move to large towns, and so on step by step to the metropolis" (Tilly 1976:13). I suggest therefore that the typology be enlarged to a fourth dimension that takes account of the difference between *circular* and *step migration*. Before evaluating the feasibility of the operationalization of this new dimension (discussed in the next section), let us focus again on the *Time* dimension.

Let us define two terms before digging deeper in the issue. First, in the discussion that follows I will consider *Time* as the *time spent in town*, i.e. the time span between the arrival in and the departure of the host community. This definition is quite practical to apply since both population registers and residence permits contain information about the date of arrival and departure. Secondly, the term *out-migration* will be defined as the act of leaving a host region for immigrants that were already in the region. We should bear in mind that natives are not included in this analysis due to their absence of the residence permits. As far as I am aware of, there is no more appropriate term in English.

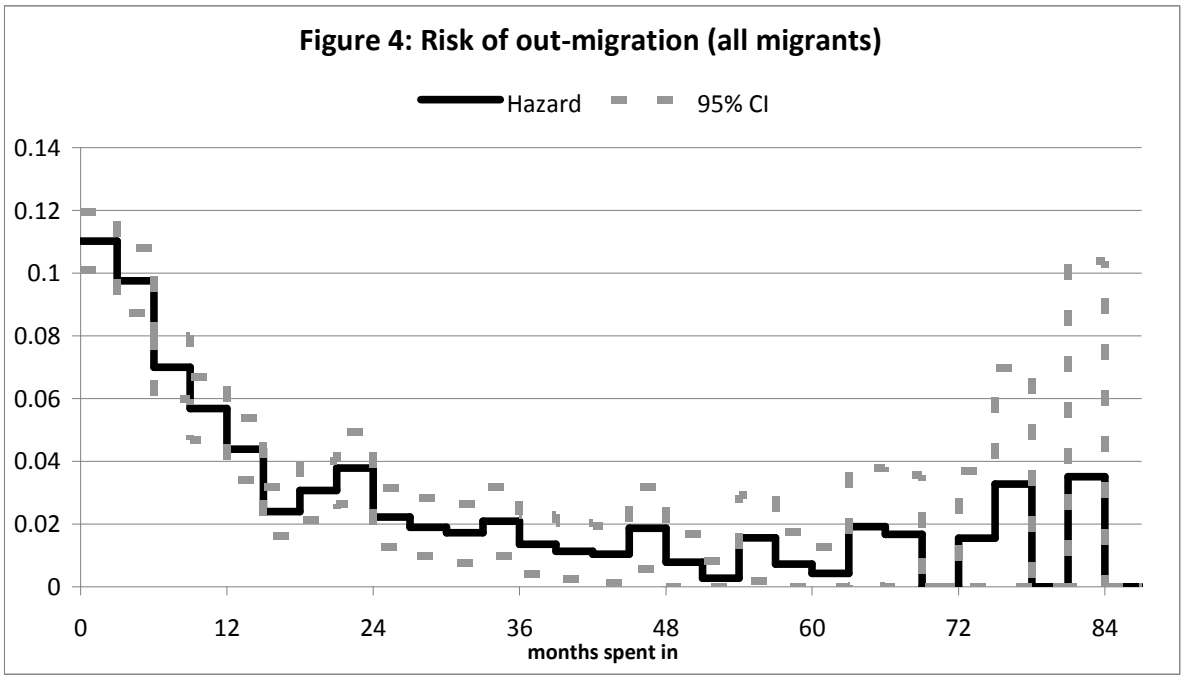
When it comes to operationalize the concept of out-migration, there is a recurrent habit among historians which consists in adopting the quite primitive approach of classifying the immigrants by length of time spent in town. The subsequent result is that the reader only gets information such as "x percent of the immigrants stayed for less than y months, whereas x other percent stayed over z

months" (see e.g. Faron 1997; Hatt-Diener 2004; Lorenceau 2001). This limited approach I believe takes its roots in the common reluctance for sophisticated statistics amongst the majority of social historians. The truth is that studying the time spent in town is technically a problem of survival analysis, similar to mortality. Starting from a cohort of new immigrants, freshly arrived in town (the radix of a life table), we observe the event of leaving the region. Each time an individual out-migrates, the initial cohort decreases, which generates an attrition process. Consequently, it is possible to apply concepts that have been proven very useful in the study of mortality, such as the *force of mortality*, which in our case becomes the *rate or out-migration*. One might also imagine calculating the *expectancy of sojourn*, the equivalent of the *life expectancy*. Virtually infinite possibilities would be offered to who engages himself in this path. I suggest here to study the rate of out-migration, that is to say the conditional probability of leaving the city at time t given that the individual is still in town at this moment. Before going to some real examples on the case of Geneva, a short discussion on the theoretical shape of the rate of return migration might be instructive.

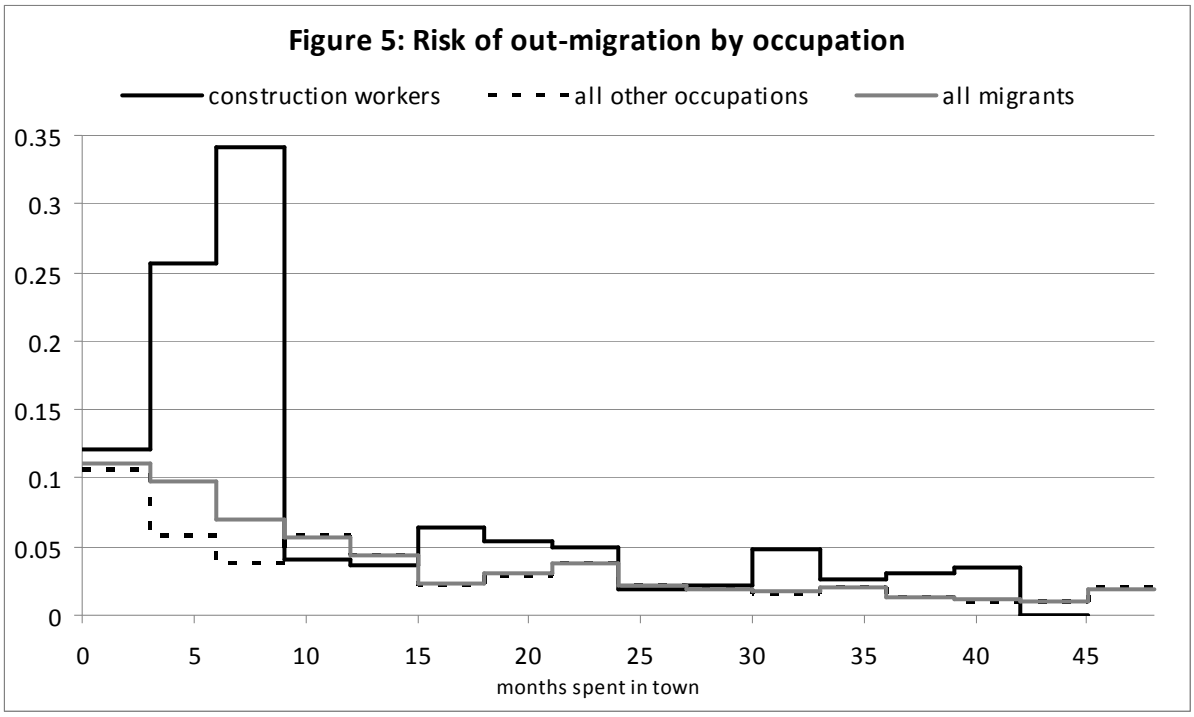
What should we expect from the shape of the rate of out-migration? All studies show a very high risk of leaving in the first months. Lorenceau mentions the following striking figure for the city of Basel in the second part of the nineteenth century: two third of men have left the city after one year (Lorenceau 2001:210). Assuming a constant risk of out-migration over this period, we would obtain a rate of about 9.2%/month (See Appendix). This assumption seems however quite unreasonable since one would expect a change in function of the time the immigrants have already spent in town. Typically, one would imagine that the risk of leaving decreases over time, reflecting a progressive settlement in town, that is to say the longer one spends in town, the more likely one is to stay. Assuming that the rate of out-migration decreases at a fixed relative pace, it is possible to define it as an exponential function $\mu(t) = \alpha \cdot e^{\beta t}$. In this model, α is the immediate turnover right after arrival while β is the relative rate of decrease of the risk over time (β is assumed to be negative). In order to estimate such a model, at least a second piece of information is needed. Coming back to Basel, we know still from Lorenceau that after 200 days (about 6.5 months), half of the male immigrants is gone. This would give us the following rough estimates for the immediate turnover α=12,9%, and the pace of settlement β=-5,7% (see Appendix). In other words, each month the risk of leaving Basel decreases by 5.7%. This simple example illustrates two possible scenarios for the rate of out-migration in the case of late nineteenth-century Basel that are represented in figure 3. The two lines represent thus two assumptions, namely a constant risk of leaving no matter the time spent in town, and a progressive settlement process.



Let us see what the case of Geneva has to offer to this discussion. The good point is that much more information is available, notably we know the time spent in town by each migrant. This measure is however only available every third month, at each renewal of the permit. For this reason I estimated a step function for the monthly risk of return migration, assuming a constant rate within the three month intervals (figure 4). It gives support to the existence of a process of progressive settlement[8].



The same representation for each origin shows a similar pattern for all groups but the Savoyards, and this pattern is even stronger when we look at the differences by occupation (almost all construction workers are Savoyards, and 2/3 of the Savoyards are construction workers) in figure 5.



The fact that the risk of out-migration for the Savoyards is actually rising until 9 months, and then stays particularly low is striking. It means that the longer these immigrants stay, the more likely they are to leave the town. The only plausible explanation is the existence of a pre-determined threshold of nine months that corresponds to the length of the summer season particular to the building industry. Consequently, the closer the individuals are moving to this limit, the more likely they are to leave. This pattern is peculiar to the Savoyard system and corresponds to one of the characteristics of Tilly's definition of the circular system: "circular migration takes a social unit to a destination through a set of arrangements which returns it to the origin after a well-defined interval" (Tilly 1976:7, I am underscoring). We should underline here that short term migration does not obligatorily force the risk of out-migration to be increasing. One could imagine for instance a group of migrants experiencing a decreasing but high risk of out-migration, which would shorten their average length of sojourn.

It seems therefore that the study of the risk of out-migration is an accurate tool to capture the time strategies toward the cities. If it declines over time, we can speak of a *progressive settlement strategy* which consists in looking for any available source of income and stay as long as possible. This strategy produces a high turnover in the first months because positions are difficult to secure, but once the individuals have made it for a while they can reasonably envisage a longer stay. If the risk of leaving rises over time before dropping suddenly, the most likely explanation is that the duration of the migration is fixed before the individuals leave their home region. We can speak of a *fixed time strategy* in this case. This distinction is more meaningful in my opinion than the usual opposition

between *short term* and *long term* migration systems. It provides a clear cut between categories and thus is more easily applicable. Moreover, a fixed time strategy probably signifies that individuals are bound to a larger extent to the social pressure, whereas a process of progressive settlement suggests that each individual is left on his own, for his best or not.

iv. Destination

It has been shown in the previous section that the 2002 typology contains some confusion between the *Time* dimension and the form of the migration path. The category circular migration does not refer to the duration of the migration episode, but rather to the fact that migrants are going back to their home regions after their sojourn. Moreover, the addition of a fourth dimension would allow to distinguish between *circular* and *step migration*, which describes the process of migrating first to smaller urban centres and then to bigger ones. This latter phenomenon is perfectly known and has given birth to the idea of a hierarchical network of cities, with the smaller ones acting as springboards for the bigger ones. Jean-Luc Pinol, for instance suggests four categories of cities depending on the role they play in the hierarchy: *villes conservatoires*, *villes Finistère*, *villes de passage avec noyau stable*, *villes de passage sans noyau stable*, and *villes mixtes* [9](Pinol 1991:151). The phenomenon is also mentioned for Milan (Faron 1997), Strasbourg, as a dispatching centre (Hatt-Diener 2004), or Seraing in Belgium, which redistributes its immigrants among the neighbouring localities (Pasleau 1993).

From the point of view of the migrants, this opens basically two possibilities at the moment to leave the host town: going back to the home region, or continue a longer circuit. These two options correspond respectively to a circular and a step migration pattern, which are independent of the distance, the duration or the mode of migration. Of course, it is probable that among the short distance migrants, a bigger share are following a circular pattern, but one can also imagine long distance circular migration, such as it was highlighted for the Northern part of Germany (Lucassen 1987), as well as step migrants travelling over short distances.

In the case of Geneva, we can tackle the question by using a quite rare piece of information, namely the destination of the migrants once they leave Geneva, which is available for about two thirds of the incoming migrants, and for 85% of the people who eventually leave Geneva (period 1837-43). By comparing the origin and the destination of each immigrant, we get a rather clear picture of the path followed, either circular or step-wise. Concerning the latter, a simple comparison between the in- and out-migration fields is striking. Whereas the Germanic regions supply a third of the immigrants, it is the destination of less than 20% of the out-migrants. The opposite phenomenon is found for Swiss

Protestant regions and France (Remund 2009:84). This asymmetry is explained at the individual level by the relatively small proportion of Germanic migrants going back to a Germanic region. Only one third of the Germanic out-migrants make this choice, while the figure is usually above 50% for the other regions. This result confirms that Geneva is only a stage among a broader circuit for most Germanic migrants, who chose often a neighbouring city as their next destination: Bern, Lyon, Lausanne, Neuchâtel, Paris, Basel, for the most common ones (Remund 2009:87). This phenomenon was also found for cities of similar size such as Strasbourg (Hatt-Diener 2004), and is certainly a major trait of European migration patterns during the early nineteenth century. Stage migration is however not limited to Germanic migrants, but the small number of observations for the other systems makes it difficult to highlight general patterns.

A more technical approach to study the opposition between step and circular migration is to work on a contingency table *origin x destination*, often referred as a mobility table and analysed by means of log-linear models. In this sort of models, circular migration is represented by the diagonal cells, i.e. the people coming from one region and going back to the same place. Four principal types of log-linear models are usually accepted. They represent four assumptions about the nature of the relationship between origins and destinations. The independence model only takes account of the size of the incoming and outgoing streams, i.e. the structure effects. At the opposite side, the saturated model takes account of all interactions between origins and destinations, that is to say it measures the specific association between all origins and all destinations. In-between, the inheritance model suggests that the strength of the diagonal association (in our case the strength of the circular migration) is the same for all origins. The Quasi-perfect mobility model (QPM) allows each system to have a different degree of "circularity"[10]. Figure 6 presents graphically each of those models.

Figure 6: Family of log-linear models tested

Independence model

Destination *j*

Origin *i*	1	2	3	4	5	
1						$\alpha 6$
2						$\alpha 7$
3						$\alpha 8$
4						$\alpha 9$
5						$\alpha 10$
	$\alpha 1$	$\alpha 2$	$\alpha 3$	$\alpha 4$	$\alpha 5$	

Inheritance model

Destination *j*

Origin *i*	1	2	3	4	5	
1	β					$\alpha 6$
2		β				$\alpha 7$
3			β			$\alpha 8$
4				β		$\alpha 9$
5					β	$\alpha 10$
	$\alpha 1$	$\alpha 2$	$\alpha 3$	$\alpha 4$	$\alpha 5$	

Quasi-perfect mobility (QPM) model

Destination *j*

Origin *i*	1	2	3	4	5	
1	$\beta 1$					$\alpha 6$
2		$\beta 2$				$\alpha 7$
3			$\beta 3$			$\alpha 8$
4				$\beta 4$		$\alpha 9$
5					$\beta 5$	$\alpha 10$
	$\alpha 1$	$\alpha 2$	$\alpha 3$	$\alpha 4$	$\alpha 5$	

Saturated model

Destination *j*

Origin *i*	1	2	3	4	5	
1	$\beta 1$	$\gamma 1$	$\gamma 2$	$\gamma 3$	$\gamma 4$	$\alpha 6$
2	$\gamma 5$	$\beta 2$	$\gamma 6$	$\gamma 7$	$\gamma 8$	$\alpha 7$
3	$\gamma 9$	$\gamma 10$	$\beta 3$	$\gamma 11$	$\gamma 12$	$\alpha 8$
4	$\gamma 13$	$\gamma 14$	$\gamma 15$	$\beta 4$	$\gamma 16$	$\alpha 9$
5	$\gamma 17$	$\gamma 18$	$\gamma 19$	$\gamma 20$	$\beta 5$	$\alpha 10$
	$\alpha 1$	$\alpha 2$	$\alpha 3$	$\alpha 4$	$\alpha 5$	

The fit of the model is measured by the significance of the goodness of fit, but somehow inversely as the usual practice on regression analyses. Indeed, if the difference between the observed frequencies and the predicted ones is not significant, then the model becomes satisfying. The Akaike and Bayesian information criterions also help to choose the best model by providing an estimation of the trade-off between the explanation power and the parsimony, the goal being to select the model that is able to predict the best the cell frequencies with as few parameters as possible. The preliminary results indicate a superiority of the QPM model in terms of reduction of deviance, but the fitted values still differ significantly from the original data. However, with a few more coefficients ($\gamma 1\text{–}5$), it is possible to reach a satisfying fit (table 1). This last model, presented in figure 7, adds five interactions assigned to Germanic, French and remaining origins. The β coefficients indicate the intensity of the return migration, while the γs indicate other possible affinities or repulsions between regions.

Table 1: Log-linear models for return migration

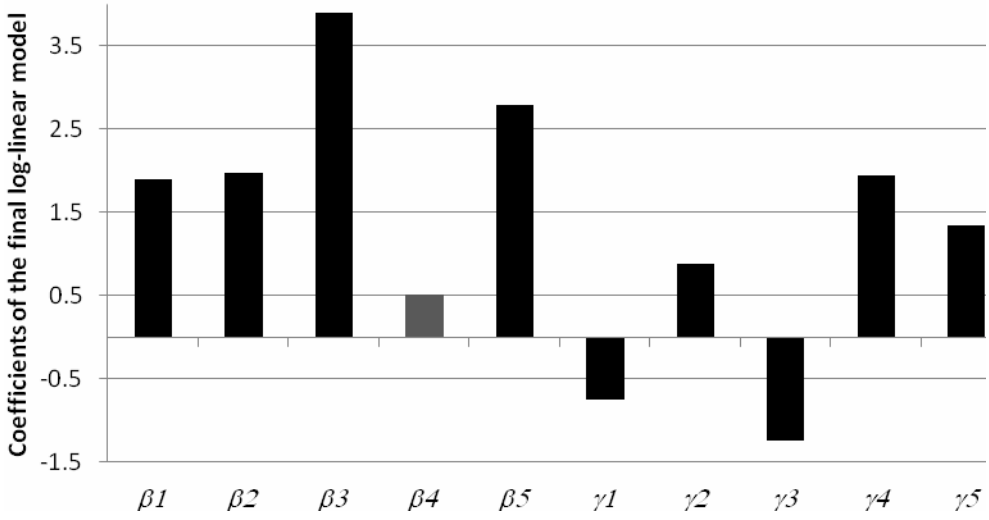
Model	***df***	***GOF***	***p>GOF***	***BIC***	***AIC***
Independence	16	1152	0,0000	1301	1290
Saturated	0	0		201	171
Inheritance	15	137	0,0000	289	277
QPM	11	58	0,0000	224	207
QPM augmented	6	10	0,1348	191	168

Figure 7: Quasi-perfect mobility model augmented

origin \ destination	Swiss prot.	Germanic	Savoyard	French	Other	
Swiss prot.	$\beta 1$					$\alpha 6$
Germanic		$\beta 2$		$\gamma 1$	$\gamma 2$	$\alpha 7$
Savoyard			$\beta 3$			$\alpha 8$
French	$\gamma 3$			$\beta 4$		$\alpha 9$
Other		$\gamma 4$	$\gamma 5$		$\beta 5$	$\alpha 10$
	$\alpha 1$	$\alpha 2$	$\alpha 3$	$\alpha 4$	$\alpha 5$	

This result confirms that the pattern of return migration is more than the reflection of the structures of in- and out-migration (independence model). Circular migration is a much more common pattern than one would expect, at different levels for each system though. The propensity to circular migration can be evaluated through the values of the β coefficients in the augmented QPM model. Figure 8 indicates clearly that the Savoyards are heading back home about twice as often as the other origins. Some other interactions are less interesting, as the repulsion of Germanics for France, as well as the French for the Swiss protestant regions.

Figure 8: levels of attraction between regions



In gray, non significant coefficient at the 95% confidence level.

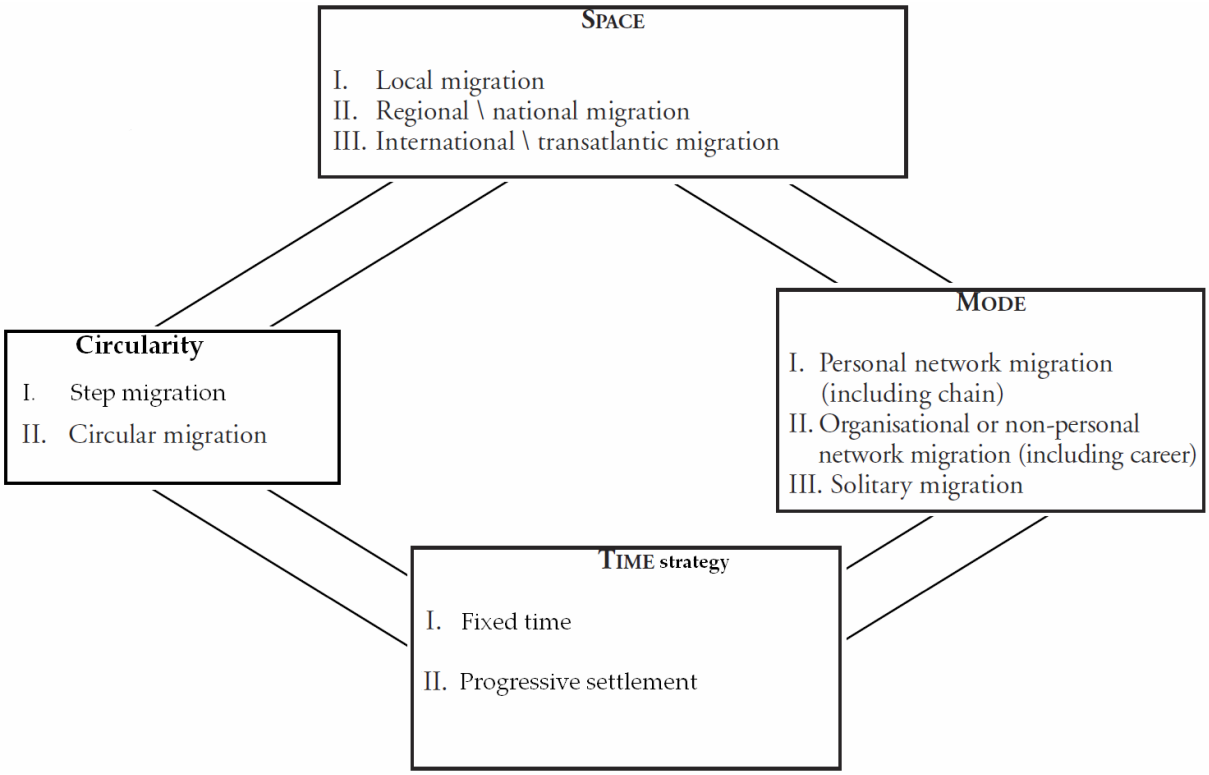
VI. Conclusions

The migration patterns highlighted in Geneva reinforce the feeling of confusion in Tilly's typology. Indeed, the Savoyard construction workers present characteristics that are attributed to at least three of the four categories. They travel over a short distance, about 30 to 50 km (local), they beneficiate of a strong social and professional network that organizes the journey and probably also the housing in the city (chain), and they present an extremely strong tendency to return to their homes after about 9 months (circular).

The typology suggested by Lesger, Lucassen and Schrover in2002, on the other hand permits to describe the systems in a set of independent dimensions, which avoids confusing overlaps. Their tri-nominal typology is a more organized tool than Tilly's four categories but still creates confusion between the circularity of the migration system and the length of the migration episode. A distinction between circular and step migration would make the typology much more efficient and would eventually include "the full range of possibilities", which was the goal of the reformulation in 2002. Moreover, the *Time* dimension suffers from the absence of a clear threshold between what is considered as short or long term migration. The analysis of the migration rates have highlighted a more interesting cleavage between increasing and decreasing risk of leaving, which reveals two different migration strategies. I argue therefore that the *Time* dimension should be reformulated into the *Time strategy* in order to distinguish *fixed time* and *progressive settlement*[11] strategies. Methodologically, I finally underscore two interesting methods for the operationalization of respectively the concepts of *level of organization* and *circularity*, namely the cartography of residential distribution and the log-linear models.

Consequently, the tri-nominal typology should be modified as indicated in figure 9, freely adapted from Lesger, Lucassen and Schrover 2002

Figure 9: A four-dimension typology of migration patterns



Still, after this rather long appraisal, a feeling of dissatisfaction remains. Certainly, the new four-dimension typology presented is more robust and permits to describe all important aspects of the migration systems. However, the multiplication of dimensions makes the typology look less and less like a collection of ideal-types as conceived by Tilly, and more and more like a enumeration of all characteristics of migration that does not tell any story anymore. Its explanation power is not the same as Tilly's four standard patterns, as for instance used in ambitious syntheses of European migration history (e.g. Bade 2003; Moch 1992). In gaining in precision and completion, the four-dimension typology lost an important share of its power of explanation. Perhaps in the future it will be possible to integrate the critics of Tilly's model, principally the overlapping of the categories, into a more complete list of standard patterns that includes the more recent discoveries and maybe some of the ideas presented in this paper, such as the distinction of the time strategies, as well as the distinction between step and circular migration.

References

Bade, Klaus J. 2003. *Migration in European history*. Malden, MA: Blackwell Pub.

Bell, M., M. Blake, P. Boyle, O. Duke-Williams, P. Rees, J. Stillwell, and G. Hugo. 2002. "Cross-National Comparison of Internal Migration: Issues and Measures." *Journal of the Royal Statistical Society. Series A (Statistics in Society)* 165:435-464.

Bideau, Alain (dir.). 1996. *Les systèmes démographiques du passé*. Lyon: Programme Rhône-Alpes de recherche en sciences humaines, Centre Jacques Cartier.

Engeli, Renée and Josiane Marin. 1974. "Les émigrés à Genève 1789-1798." Department of Economic History, University of Geneva, Geneva.

Faron, Olivier. 1997. *La ville des destins croisés. Recherches sur la société milanaise du XIXe siècle, 1811-1860*. Rome and Paris: Ecole francaise de Rome, diff. de Boccard.

Guichonnet, Paul. 1945. "L'émigration saisonnière en Faucigny pendant la première moitié du XIXe siècle (1783-1860)." *Revue de géographie alpine* 33:465-534.

Hatt-Diener, Marie-Noèl et al. 2004. *Strasbourg et strasbourgeois a la croisee des chemins. Mobilites urbaines, 1810-1840.* Strasbourg: Presses universitaires de Strasbourg.

Herrmann, Irène. 2003. *Genève entre République et Canton. Les vicissitudes d'une intégration nationale, 1814-1846*. Genève: Ed. Passé présent.

Hochstadt, Steve. 1999. *Mobility and Modernity: Migration in Germany, 1820-1989*, Edited by G. Eley. Ann Arbor: The University of Michigan Press.

Jackson, James H. and Leslie Page Moch. 1989. "Migration and the social history of modern Europe." *Historical Methods* 22.

Kertzer, David and Dennis Hogan. 1985. "Longitudinal approaches to migration in social history." *Historical methods* 18.

Lesger, Lucassen, and Schrover. 2002. "Is there life outside the migrant network? German immigrants in XIXth century Netherlands and the need for a more balanced migration typology." *Annales de démographie historique* 104:p. 29-50.

Livi-Bacci, Massimo. 1999. *La population dans l'histoire de l'Europe*. Paris: éditions du Seuil.

Lorenceau, René. 2001. "Bâle de 1860 à 1920 : croissance et mobilités urbaines." Université de Tours, Tours.

Lucassen, Jan. 1987. *Migrant labour in Europe, 1600-1900 : the drift to the North Sea*. London ; Wolfeboro, N.H.: Croom Helm.

Lucassen, Jan et al. 1999. *Migration, migration history, history : old paradigms and new perspectives*, Edited by J. Lucassen and L. Lucassen. Bern ; New York :: P. Lang.

Lucassen, Jan and Leo Lucassen. 2009. "The mobility transition revisited, 1500?1900: what the case of Europe can offer to global history." *Journal of Global History* 4:347-377.

Meynet, Mickael. 2008. *Les Frahans macons de Samoens, leur histoire du 14e siecle a 1914*. Samoens: Ed. le Tour.

Moch, Leslie Page. 1992. *Moving Europeans: Migration in Western Europe since 1650*. Bloomington: Indiana University Press.

Oris, Michel. 1990. "Les électeurs du Conseil de l'Industrie et du Travail de Liège en 1905: composition et origine d'un "prolétariat" urbain." *Revue Belge de Philologie et d'Histoire* 68:850-901.

—. 2003. "The history of migration as a chapter in the history of the European rural family : an overview." *The History of the Family* 8:187-215.

Pasleau, Suzy. 1993. "L'immigration des travailleurs à Seraing durant la seconde moitié du XIXe siècle." *Annales de démographie historique*:227-249.

Perrenoud, Alfred. 1979. *La Population de Genève du seizième au début du dix-neuvième siècle: étude démographique*, Edited by SHAG.

Pinol, Jean-Luc. 1991. *Le monde des villes au XIXe siècle*. Paris: Hachette.

Remund, Adrien. 2009. "Les chemins de la migration: analyse de la mobilité étrangère à Genève (1837-43)." Département d'Histoire Economique, University of Geneva, Genève.

—. 2010. "The contribution of the registers of residence permits to the study of pre-industrial European migrations." in *Asociación de Demografía Histórica*. Sao Miguel, Açores, http://adeh.org/sites/default/files/adrien_remund.pdf.

Ryczkowska, Grazyna. 2003. "Accès au mariage et structures de l'alliance à Genève, 1800-1880." Département d'histoire économique, University of Geneva, Geneva.

Schumacher, Reto. 2010. *Structures et comportements en transition: La reproduction démographique à Genève au 19e siècle*. Bern: Peter Lang.

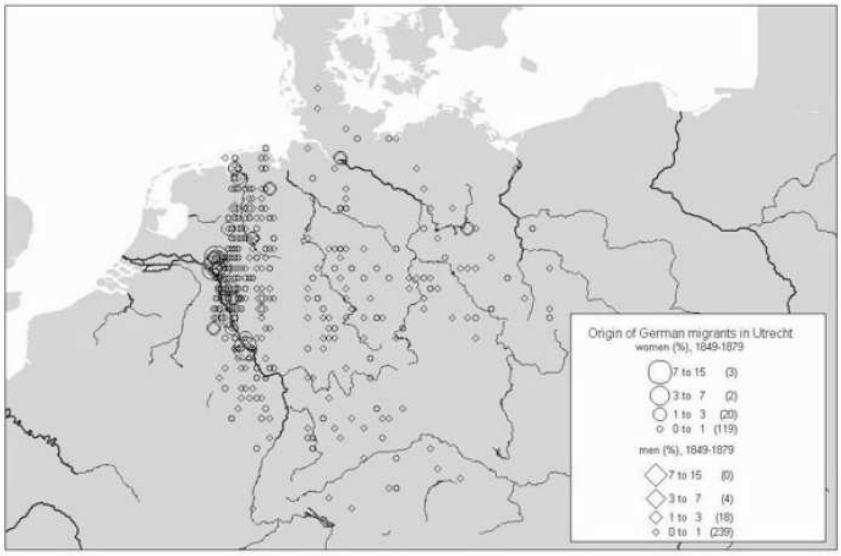
Tilly, Charles. 1976. "Migration in Modern European History." in *CRSO Working Paper*. Ann Arbor: The Center for Research on Social Organization, The University of Michigan

http://deepblue.lib.umich.edu/bitstream/2027.42/50920/1/145.pdf.

—. 1978. "Migration in Modern European History." Pp. 48-74 in *Human Migration: Patterns and Policies*, edited by W. McNeill and R. Adams. Bloomington: Indiana University Press.

Appendix

Map. 3 *Origin of German migrants in Utrecht, 1849-1879*



Source: (Lesger, Lucassen, and Schrover 2002:40)

Some math

i. $$l(x) = e^{-\int_0^x \mu(z)dz} \Rightarrow \mu = -\frac{\ln(l(x))}{x} \Rightarrow \mu = -\frac{\ln(.33)}{12} \cong 0.0924$$

ii. $$\mu(6.5) = -\frac{\ln(.5)}{6.5} \cong 0.1066$$

$$\mu(12) = -\frac{\ln\left(.33/.5\right)}{5.5} \cong 0.0755$$

$$\ln(\mu(x)) = \ln(\alpha) + \beta \cdot x \Rightarrow \alpha \cong 0.1285 \; and \; \beta \cong -0.057$$

[1] She names land ownership, employment demand, rural population patterns, and distribution of capital as the four main factors influencing the change of migration patterns in the long run.

[2] The 1978 hard copy of his paper is rather difficult to obtain, which is not the case for an early version that takes the form of a 1976 working paper of the University of Michigan. For practical reasons I will refer to the 1976 working paper in the following citations.

[4] So far, only those six years have been computed, mainly because of limitations in resources availability. It is planned to increase the coverage over the next years in order to get a broader picture of migration in the nineteenth century.

[5] For several reasons, the dates of arrival and departure were not judged reliable enough to be used directly. The time spent in town is thus estimated by the number of renewals of the permits (each renewal adds another three months).

[6] It is however highly probable that the Swiss Protestants are underestimated due to the miss registration of domestic servants, a very common activities among young women from this region.

[7] Three reasons drove us to merge Swiss Germans and subjects of the future Germany. They share a common culture, a similar socioeconomic profile (concentration in small business and services), and face the same hostility in the host community (Remund 2009). I suggested referring to them here under the general name of "Germanics".

[8] A linear regression on the natural logarithm of the risk of out-migration gives a value of 10.2% for a, and -5.5% for b. The R2 of 0.92 gives a strong support to the model.

[9] One could suggest the following translations: conservatory cities, dead-end cities, "colander" cities with stable kernel, "colander" cities without stable kernel, and mixed cities.

[10] The Independence model assumes that the frequencies observed in the table are only originating in structural effects. In other words, a high frequency n_{ij} only reflects the fact that an important share of the immigrants comes from origin *i*, while most of the out-migrants chose destination *j*. The Inheritance model allows for interaction effects, i.e. a general tendency to return migration assumed to be the same for all origins (β). The *QPM* model releases this assumption by assigning a particular return migration effect to each of the origins ($\beta_{1\text{-}5}$). Finally, the saturated model serves only for theoretical purpose, since it contains a coefficient for each cell of the table ($\beta_{1\text{-}5}$ & $\gamma_{1\text{-}20}$). Therefore, the frequencies are exactly predicted by the saturated model, at the price of an extremely complex form, which reduces its interest.

[11] And its corollary, the majority of people who leave Geneva seeking for a more successful destination.