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Private Networks and Economic Institutions in 19th-century Paris: An Unstable Complementarity

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19th-century France has often been described either as totally centralized, with an already strong State, or as lacking any kind of economic regulation after the abolition of guilds and quality norms during the Revolution. During the last 15 years, however, historians have demonstrated the influence and efficiency of various meso-level “institutions” (in the loose sense of the word), including family firms as well as notaries, *conseils de prud’hommes* (arbitration boards between employers and employees) and Chambers of Commerce (Hirsch, 1991, Plessis (ed.), 1993, Hirsch and Minard, 1998, Hoffman et al., 2000, Cottureau, 2002). My own PhD thesis about the Paris Chamber of Commerce in the 19th century (Lemerrier, 2003) and my current research dealing with a broader system of meso-level economic institutions aim at going one step further. What remains to be done is to investigate the relationships between different possible forms of social organization, from the most private ones (like marriage strategies) to the most formalized ones (like the Bank of France or Commercial Courts). Each form of organization provides a different answer to general economic problems such as access to information or transaction costs reduction. Mixing network strategies and institutional strategies may sometimes increase the total benefit for a given firm or entrepreneur: for example, a good matrimonial choice may make the election to an advisory board easier; then, inside this institution, members are able to establish new private links – in addition to getting insider information. But “network” and “institutional” strategies may also be seen as alternatives, for example when unions try to provide information and services to merchants who lack good personal connections.

To understand the dynamics of such networks and institutions, sometimes acting in synergy, sometimes competing with each other, I gathered data on 822 members of Parisian economic institutions between 1800 and 1871 (Chamber of Commerce, Commercial Court, boards of the Bank of France, Municipal Council), most of whom were at the same time bankers, merchants and/or industrialists. These data include information on individual “institutional careers” and on private ties (family ties and business partnerships). On the basis of this database and of general historical knowledge on these institutions, I will try to assess the changing weight of private ties on individual institutional careers, at the same time questioning the existence of firm-level or family-level strategies to control economic institutions.

Part I of the paper gives an introduction to the case study, describing each institution and the economic advantages that it provided to its members. Part II describes the data, the general pattern of private ties between institution members and the evolution

of this network (its construction and then its fading after the 1840s). Part III discusses the centralization of this network around the “high bank” and its meaning in terms of individual careers. Part IV finally tries to explain the changing complementarity between private networks and meso-level institutions, taking into account institutional specialization, new elite strategies and the birth of a new kind of organization, the *chambre syndicale*.

I- Firms, institutions and general interest. Five Parisian meso-level economic institutions.

This paper is part of a broader study of meso-level economic institutions in the French 19th century. By “meso-level”, I mean institutions that were neither a real part of the administration nor spontaneous businessmen or employers unions (*corps intermédiaires* in French – see Chatriot and Lemerrier, 2002). They enjoyed an official status but their members were not civil servants. They were not paid for their part-time institutional activity and they went on with their profession or business. Especially in the case of businessmen, this leads to two connected questions: why did they accept such positionsⁱ? If it is, at least partly, because they thought that it would improve their business position, does it follow that these institutions were nothing more than the expression of private interests? This is a very important issue because such institutions participated in decisions on economic policies at a national level (they were asked for advice or they spontaneously advocated particular decisions) and/or in the creation and enforcement of local norms (specific for a town and/or a branch).

From the point of view of the relationships between networks and institutions, such a situation may lead to various patterns. Meso-level institutions could act independantly from any “private”, more informal network (the republican ideal) or they could be the mere voice of such private networks (the conspiracy theory, that was often used to criticize such institutions). But we can also imagine more mixed or dynamic situations. Institutions may well have been the place where different “networks” met and looked for a balance between their interests (institutions would create a weak tie between clusters of strong ties). If some institutions proved more efficient than private ties for particular tasks, their success may have weakened the private network; but if they added nothing to what the network already provided, persons without efficient private ties only would have accepted membership – which might in turn change the institution’s position, etc. The aim of my empirical study is to find which of such models gives the best description of what happened in 19th-century Paris.

I must begin with a short presentation of the institutions studied, in order to show why being a member may have been useful for a firm or an individual entrepreneur. Five institutionsⁱⁱⁱ were chosen because my study of the Chamber of Commerce showed that they shared many members and that they communicated in various ways (coordinated campaigns, mutual information, common committees...). Each institution

included 10 to 60 members. Their work was collegial. The members were very reluctant to admit the idea of a balance of interests (such an idea was almost taboo in French political thought during the century after the Revolution, see Rosanvallon, 2004) and they generally refused to describe themselves as representatives of anything. It was only after 1867, when the employers unions (*chambres syndicales*, see below) had gained influence in Paris, that the commercial judges and the members of the Chamber of Commerce were explicitly chosen as representatives of a given trade (Lemerrier, 2003). There were obviously forms of representation of interests (of various scales and sorts) and balance of interests before 1867, but they could only with great difficulties be mentioned as such. The idea of disinterestedness, of giving some time for public service, of working for the general interest of the economy, was omnipresent in contemporary descriptions of the five institutions. It placed their members in a double bind: they were elected or appointed as businessmen, because they were currently involved in business, which gave them specific skills and knowledge of other businessmen's reputation, wishes, problems, etc. But at the same time they were expected to use the language of general interest and not to speak as lobbyists for their particular firm or trade. "In the name of whom do the members speak/act?" is a key question to understand the new institutional system created after the Revolution and based on the abolition of specific guilds. Do members fight for general interest (variously defined), for their firm and/or family, for a branch opposed to another one (cotton vs. wool, cotton spinning vs. cotton weaving etc.), for a particular place, for the employers or for the bourgeoisie? This political problem is tied to the question of the relationships between private networks and institutions.

The Commercial Court (Tribunal de commerce)

It was created in the 16th century to judge commercial disputes (usually between merchants) and it was only slightly reformed during the Revolution^{iv}. The Paris Court often influenced the evolution of national commercial law, not only through jurisprudence but also by advocating reforms and by being sought for advice. Commercial judges were active (or, for a small proportion of them, retired) merchants, bankers or industrialists. From 1790 to 1807 and from 1848 to 1851, they were elected by all persons paying a trade tax in Paris. In the other periods, they were elected by several hundreds of *notables commerçants* who were themselves chosen by the *Préfet* (who generally asked for, and followed, the advice of the Chamber of Commerce) with no formal criteria, but with the idea that they should have the best possible reputation: it was a kind of elite built by cooptation.

Corruption and favoritism were obvious risks in a court with merchant judges, but they were limited by internal rules and by the possibility to appeal judgements to a higher court including professional judges. Therefore, the advantage of being a judge was probably not that you could always take the best decision for you and your friends – even if it was possible in some cases. But you could probably learn a lot about what to do and not to do, about who was to be trusted and about the state of each economic branch by seeing thousands of cases and hundreds of bankruptcies each year. In

addition, being chosen as a *notable* and then as a judge increased your reputation (such qualities were used in advertising), especially in middle-size business.

The Municipal Council

During the Revolution, a uniform system of local administration with elected councils was created. But Paris remained an exception^v. The Parisian Council had less decision power than in other cities, because the *Préfet's* authority remained very strong. But the Council had at least some influence on economic issues such as the choice of location for new equipments (canals, warehouses...) or the organization of some trades (bakery, butchery...). Most of the time, municipal councilors were appointed by the government, the only exception being between 1834 and 1847, when they were elected by the wealthiest citizens. Of course not all councilors were businessmen, but some were. As an entrepreneur, becoming a councilor gave you access to speculative information (about future streets, train stations, canals...) and allowed you to get in touch with various parts of public administration. In addition, it could probably help to get procurement contracts, at a time when their rules were not too strict.

The General Board (conseil général, also called conseil de régence) of the Bank of France (GBBF)

It was created in 1800, like the Bank itself. It included three *censeurs* and fifteen *régents* and, after 1806, a governor and two subgovernors^{vi}. It defined the Bank's general policy (e.g. the level of interest rates or the creation of new types of banknotes) and it answered to the firms' particular credit requests. During the century, the Bank's field of action became more and more national (as opposed to Parisian), but the members of the GBBF had to live in Paris. The governor and subgovernor were appointed by the government, whereas the *régents* and *censeurs* were elected by the Bank's most important shareholders. The turnover was slower in the GBBF than in the other institutions considered here: changes only happened when a member died or resigned. In such cases, a candidate supported by the GBBF would often – but not always – be elected. Being a member of the GBBF allowed to directly influence the French financial policy, in general and vis-à-vis specific firms. It was probably the best place to get information about the liability of all major firms.

The Discount Council of the Bank of France (conseil d'escompte)

It was created in 1803. Its role was to decide whether the Bank would accept each commercial paper presented by a Parisian firm. The members of the Discount Council were therefore expected to have in-depth knowledge of the reputation of each firm. They were appointed by the GBBF. Whereas most GBBF members were bankers, the discount councilors were generally specialized merchants or industrialists (some trades being nearly always present, like wood trade or bookselling). The frontier between the two institutions, however, was not hermetic: no less than 25% of discount councilors became *régents* or *censeurs* of the GBBF. The members could get in-depth knowledge

of the state of Parisian firms and they could influence the choice of firms which were given credit.

The Chamber of Commerce

The Paris Chamber of Commerce was created in 1803. There were Chambers of Commerce in the *Ancien Régime*, but not in Paris. They were abolished in 1791 along with the guilds. When they were re-established, their role was – in theory – only advisory. In fact, some of the Chambers regained their previous powers to administer local equipments and services and to define local norms. In Paris, the Chamber was above all an important source of advice and statistical information for the government as well as for local *Préfets*. Advice and statistics obviously could be biased in favor of one branch or firm, even if the Chamber generally adopted the language of general interest. Given that the authorities did not have many alternative sources of information, the Chamber influenced many decisions. In addition, from the 1840s onwards, the institution began to create or to administer equipments for merchants such as a library or warehouses. The first members were elected by a few businessmen who had themselves been chosen by the *Préfet de la Seine*. Their followers were chosen by means of pure cooptation up to 1832^{vii}. Then they were elected by 50 to 60 persons, including the outgoing Chamber but also the commercial judges and a few other voters chosen by the outgoing Chamber and the judges. In 1849, for one election of the whole Chamber, all persons having paid a trade tax for a few years could vote. After 1852, the Chamber was elected by the same *notables commerçants* who voted for the Commercial Court.

Being a member of the Chamber made you part of practically every decision-making process in economic policy (national as well as local), which means that you had access to lots of insider information, particularly about what the government was planning to do in the next months. In addition, you could try to lobby for your economic sector, but you had to do it indirectly: direct claims in favor of one given branch were not part of the institution's rhetoric. But if you were able to translate your firm's or sector's interest in terms of general interest of the French economy and to convince the other members, you would be able to get what you wanted.

For each of the meso-level institutions studied here, there are good reasons to think that being a member could be good for your business. But we have to consider that it was also time-consuming and that there were alternative means to get information, reputation or influence. Direct lobbying toward the administration and private ties (marriage etc.) with local or national authorities were one of these means. It is difficult to compare their efficiency to that of being present in the institutions. But it is also difficult to find a prominent business family, known for its private links with the State, that was totally absent from the institutions studied here. Apart from such relationships with the administration, the economic elite also benefitted from internal networks. Before the age of the modern communication means, correspondents in provincial or foreign cities (who were often part of the family) played a very important role in banking

and commerce; before the expansion of joint stock companies, family firms were a majority in most industrial branches (Hirsch, 1991). What will be considered here is the interaction between such private networks and institutions: do the members of such networks use institutions as a complementary tool – for which networks and which institutions is this true?

II- Private ties among institution members: a general description

Network data

If we want to study the relationships between private networks and institutions, we have to define the private networks we are interested in, and it is not an easy task. In some well-documented individual cases, it may be possible to stress for example which uncle helped the person to become a member of an institution and why this membership was useful to the family firm^{viii}. In another case, we may discover the economic and institutional utility of classmates or very remote kin. But such narratives convey two risks. First, if we do not have an *a priori* definition of a tie, we will probably always find network explanations of anything, since each pair of prominent entrepreneurs probably have some kind of tie, if we allow very weak and indirect ties. But then the question is: Why are some very weak ties efficient, while the great majority are not? The second problem is a problem of symmetry and of historical information. Is our well-documented case typical? Aren't we more reluctant to give a narrative about an entrepreneur without well-known private ties in the milieu? To give a general view of the networks between all members of meso-level institutions helps to consider the entrepreneurs with less links and those without memoirs and biographs. Since I wanted to reach such a general view, I had to define what I meant by "private tie" and to concentrate on the strongest ties in order to get reasonably complete information. I included first and second degree blood ties (father-son, cousins...), but also marriage ties between lineages and economic partnerships above a given duration and importance. Such borders are more intuitive, but I tried to concentrate on the strongest ties and to keep homogenous criteria. For example, in "marriage ties", I included not only the common case of father-in-law-son-in-law links but also everything that I considered to be recent and well-known alliances between two lineages.

I will treat those different kinds of ties simultaneously, even if this choice is questionable. The underlying question is: do members of the same family share the same economic interests (since it is obvious for partners)?^{ix} The answer was not obvious for the actors themselves, as is shown by the discussion of a project forbidding the simultaneous election of close relatives or associates in Chambers of commerce (Chambre de Commerce de Paris, 1850). In the case of the commercial courts, a 1810 law (still enforced in the 1860s) enacted a compulsory king's authorization for relatives (by blood or marriage) at the first and second degree to be judges in the same court, even if the alliance followed the election^x. My decision to include both kinds of strong

ties is due to the important place of family firms in the 19th-century; Jean-Pierre Hirsch has described partnership as a “complementary instrument of family strategies, used to settle those questions not already resolved by means of marriage; for it encompassed other sectors of the family domain and for different lengths of time” (Hirsch, 1991). This phenomenon is not specifically French: even in places where it was easier to create a bank under the form of a stock company, commercial banks appeared as “the financial arms of extended kinship networks” (Lamoreaux, 1986).

My dataset includes all the men who were members of at least one of the five institutions examined in this paper at least for a few months between 1800 and 1871. 1871 was chosen because of the change in the political regime and because the *chambres syndicales* (employers unions) took control of the elections to the Chamber and the Court from ca. 1867 on, which opened a new period. For the more dynamic part of the study, the 822 men in the dataset were classified in 4 groups (“periods” or “generations”) according to the date of their first election or appointment in one of the institutions considered here: 1785-1803 (when most of the institutions were created or reformed) for 92 of them, 1804-1831 for 253, 1832-1848 for 275 and 1849-1871 for 294. 1831 and 1848 are years of political changes and reforms in the appointment procedures of some of the institutions (with an important turnover).

Some of these men are already well-known thanks to historians who found and published invaluable information about their kinship and economic ties (in addition to those already cited, Gille, 1959, Bergeron, 1978 and Chassagne, 1991 were among the most useful for me). A majority of my network data comes from these studies, although I found additional ties in archival records and I am still trying to improve my information. This means that this information is slightly asymmetric depending on periods and institutions. But the structure that I found seems very robust to small changes in the data.

A general, static view: a very heterogeneous network

If we only consider first-degree kinship ties (father-son, brothers), we can distinguish 33 family groups of 2 to 4 men including only 9% of the population. In the vast majority of cases, we know that these men were associates too, at least for a part of their life. Such strong ties (which in fact mix successions, indirect successions and simultaneous involvements in the same or in several institutions) seem to be very unusual among the members of meso-level institutions. The picture shows little change if we add more remote but still close kinship ties (grandfather-grandson, uncle-nephew, cousins). We then see 42 groups of 2 to 5 men, including 13% of the population. But a dramatic change appears if we include marriage ties as well as blood ties (graph 1)^{xi}. 38 components including 2 to 65 men – all together, 24% of the population – appear. As for partnership ties (graph 2), 15% of the men considered here have at least one such tie inside the population. The graph shows one very large component with 68 members and 23 other groups of 2 to 4 simultaneous or successive associates.

15% of the ties between relatives by marriage are at the same time association ties; 22% of the associations unite allied lineages. It is difficult to comment on the magnitude of these figures because of the lack of comparable studies, but we should bear in mind first, that the majority of the private ties between institutions members are “not so strong” and second, that we deal with two distinct kinds of ties in the majority of cases. Graphs 1 and 2 nevertheless show similar pictures, with one large and complex core “network” (or, more precisely speaking, “component”), many small groups and a majority of isolates. 24 men appear in the main component of the kinship network as well as in the main component of the partnership network. The two components are therefore not exactly the same. For example, Laffitte used association more than alliance, at least with people involved in economic institutions: he may have used alliance to create ties with other milieus. But we find the same kind of people, namely high bank families, at the core of each network, which gives an incentive to mix them and to describe the global network.

Here it is important to stop and wonder what such large groups (or “private networks”) could mean for their members. Were they conscious of the existence of such structures? Did they share something (interests?) or did they exchange something (information?) preferentially inside such groups? The answer is not obvious, as the groups vary in density. It seems obvious that Latteux and Pénicaud did not consider each other as relatives and they probably did not even know that a path could be retraced between them. But qualitative evidence^{xii} shows that sometimes, 4 or 5 degrees of separation seem a short path. And it is probably even more the case if a redundancy exists, creating “cliques” in terms of network analysis^{xiii}, like in some parts of the largest component, for example around the Delessert or the Davillier families. In fact, in each network, the large component seems to be a mix of cliques (which often describe family firms) and bridges built by particular individuals, such as Jean-Baptiste Say. In this case, his economic activities were second to his intellectual work and did not last very long, but can we say that this bridge must be ignored? With many similar ones, it builds, in the whole network (graph 3), a quite dense component with few weak points (erasing one or a few people would not be sufficient to destroy it)^{xiv}.

If we mix all kinds of ties, we find one large component with 132 individuals (16% of the population), 31 smaller components with 2 to 9 members and 586 complete isolates, who represent 70% of the population (graph 3). We must therefore bear in mind two facts. On the one hand, a large majority of the members of economic institutions are not even remotely linked to any of their “colleagues” – if we take kinship ties and strong economic ties into account. On the other hand, many of the small, densely tied family/firm groups are merged in one large component whose members are probably not aware of its general structure, but which also very probably constitutes a dense milieu where many things – information above all – are exchanged.

This component is something specific: on the contrary, the majority of small family groups remain isolated. Here we have something to interpret that is neither a family nor a group of people only defined by objective attributes, but a set of – even remotely –

interconnected persons. This component doesn't necessarily have a collective strategy, but it probably influences individual economic and institutional careers. The fact that many well-known "high bank" families are part of this component reminds us of the flexibility of partnerships in this economic sector (although ties like "being directors of the same stock company" are not included) and of the fact that high bank is connected to more specialized merchants or industrialists (coal and iron merchants, forge and mine owners, wool, wood or wine merchants...) as well as to economists. A network-oriented view of the "high bank" may help to a better understanding both of this particular sector and of the world of meso-level institutions. The history of the "high bank" itself, gaining influence after 1815 thanks to the government loans and confronting "new banks" after 1848, has therefore to be considered (Plessis, 1985, Bergeron, 1991, Stoskopf, 2002). Is it correlated to the co-evolution of networks and institutions?

The construction and deconstruction of the network

There are several ways to create a more dynamic view of the "network of private ties in institutions" that we consider here. Graphs 4 to 7 use a partition of the population in four periods according to the first date of election or appointment to any institution (1785-1803, 1804-1831, 1832-1848, and 1849-1871). The first generation mostly shows small chains, but the 16-persons component already encompasses people who then became the skeleton of the large component of the whole network: the Perier and Delessert families were already linked by other bankers. But connections with the Ternaux-Moreau group (more specialized merchants and industrialists), the Davilliers and the group of intermarried *régents* around Delon remained to be created – or, if some of these connections already existed by the virtue of alliance or association, they passed through men without any institutional role at the very beginning of the century.

The second period may be viewed as a time of construction and stabilization of the new (or reformed) institutions: their roles were gradually defined and their existence and functions became common knowledge for the economic elite. The graph shows a dramatic increase in the number of members of the network's main component. In 1831, two thirds of the final large component already existed. Its form and subgroups were already stabilized, even if some connections were weak (with little redundancy). Some of the new members entered pre-existing cliques in the component (they appear as followers), while others, like Antoine Odier or Michel Frédéric Pillet-Will, created new links between subgroups and therefore shaped the new large component. Qualitative knowledge of the data shows that the component was at the same time built by these new men (maybe elected because they were common relatives or associates of several already present small groups) and by new ties (new partnerships and new marriages): the milieu defined by the large component was at the same time uniting and self-recruiting for the institutional positions. This double evolution was very important for the institutional system: from the 253 "new men" of the second period, 23% (55 persons) fell into the large component.

On the contrary, the third and fourth periods not only added less people to the large component, but they did not modify its structure, the new men/ties very often being redundant to older ones. Only 6 to 8% of the new men fell in the large component and they only increased its density instead of reshaping it. It is also noticeable that the smaller components exhibit few new family or firm groups. Moving to statistical accounts of the same reality confirms the existence of a dramatic change at the beginning of the 1830's and of an even stronger tendency to isolation after 1848. Table 1 shows the decrease of private ties among newcomers: it affects every kind of tie as well as the network degree. Complete isolates replace members of the component. This phenomenon points at an evolution of the whole business relational system as well as of the role and identity of each economic institution.

To get a better idea of differences between institutions, we can use a few snapshots (only including members in charge in a given year). As table 2 sums it up, the density of ties inside the institutional world shows a decrease, but with important differences among institutions. The Chamber of Commerce falls from a very high integration of its members in the institutional world to figures around average, whereas the GBBF experiences an increase in ties that goes contrary to the general tendency, but that stops abruptly in the last period. Comparing the 1820s and the 1860s is particularly interesting. The 1823 graph (graph 8) includes, with 15 men, a significant part of the large component^{xv}. Together they hold 8 of the 18 elected positions in the GBBF and 6 of the 15 positions in the Chamber of Commerce, so that they are not far from forming a majority – not to mention 3 of the 12 positions in the Discount Council, 3 of 24 in the Municipal Council and 1 of 25 in the Commercial Court. This group, in which bankers are an overwhelming majority, seems to have an eye everywhere and a significant influence on two major institutions. But is it a group? The pivotal place of Roux and Laffitte in it is unquestionable. The 1820s is the time of the “canals fever” and other speculations of the same sort, involving what is often called “saint-simonian banking” and implying changing configurations of partnerships. Therefore, even if they may compete sometimes, it may well be thought that these men share some common interests and work together to promote them, particularly in the Chamber of Commerce, which is often asked for advice on questions related to canals. In 1863 (graph 9), the situation looks very different^{xvi}. The components are smaller and less dense and the only institution including more than two tied members is the General Board of the Bank of France.

Finally, table 3 gives a more precise account of the weight of each type of “network-profile” in each institution. It is built in terms of member-years in each period, allowing to include all members at the time and not only the newcomers and to take durations of stay into account. It confirms that even if “isolated” men practically always formed a majority in the Commercial Court and in the Municipal Council – probably above all because these institutions found their members in more various social circles –, there was, even there, a clear tendency towards less network integration. It also underlines the importance of the 1832 change in the Chamber of Commerce and in the Discount Council, whereas the decline of networks in the GBBF occurs later and with less

magnitude^{xvii}. Has the GBBF become the only useful meso-level institution for the promotion of the interests of high bank families? Or is it the only institution where they still have an easy access, which would mean that networks are no longer important factors to be elected elsewhere?

III- High bank, private networks and institutional careers

The existence of ties in the institutional world suggests two interpretations. First, the men who are chosen to become new members (or a part of them, as a majority are isolates) are somehow tied to previous members of the institution where they enter or of other institutions. It means that (strong) ties sometimes help to get a position: the market for institutional positions may be compared to the market for jobs, and we may study the role of social capital in such careers. But we also have to consider the fact that the person accepts to be chosen and to spend some time in the institution. We may wonder if people choose their relatives or associates only because they know their qualities, or to help them in an individual career, or also because they want to exercise some kind of collective influence on the institutions (a deliberate network strategy). And if private networks have such strategies, they are only efficient if more powerful strategies do not oppose them. We must consider both points of view if we want to understand the evolution of the whole system.

A network centered on the high bank

May we define the large component of the global network as “the high bank”? Even if some high bank families are to be found in smaller components (like the Foulds), it is noticeable that no high bank family of the first generation (as defined by Bergeron, 1991) is either totally absent from the institutions or isolated from the point of view of private links between institutions members. Only for the members of the Chamber of Commerce and the councils of the Bank of France do I have homogenous data about their business activity. I classified them as “bankers” if they were at least one time defined as bankers in contemporary records^{xviii}, “merchants” if they were at least one time defined as “*négociants*”, a word associated with the idea of a non-specialized, large scale trade, and “specialists” if they were always defined by a specialty (e.g. wine or iron), either as merchants or as industrialists. The members of the Chamber of Commerce have a mean degree of 2.7 in my dataset^{xix}, but the bankers among them have a mean degree of 5.6, compared to 1.3 for merchants and 1.6 for specialists. Three quarters of the bankers belong to the large component, compared to less than one third of the others. And only 12% of the bankers are isolates, compared to half of the others. These differences hold for each of the periods. In the GBBF too, three quarters of the bankers (but also two thirds of the merchants) belong to the large component, compared to one quarter of the others. In the Discount Council, the tendency is the same, although it includes less bankers and less members of the large component.

On the other hand, the largest component is not only “the high bank”. From the 69 members of the Chamber of Commerce who are part of it, only half called themselves bankers, at least sometimes (and not all of them were part of the high bank families as defined by Bergeron, 1991). The same is true for the 63 members of the GBBF in the component (often the same persons, in fact). But the bankers are the core of the component, according to any measure of “centrality”. For example, we may wonder how many of the component members each man can “reach” by a path of length two (with one or two ties between them). The mean figure for the Chamber members is 15, but it is 22 for the bankers and 12 for the others. With the maximum reachability at level two (20 to 45 reachable persons), we find bankers, but also Vital Roux, Jean-Baptiste Say and Jean-Baptiste Chaptal. They are merchants or industrialists and not bankers, but above all they play a very important role in the birth of business schools and in saint-simonian networks. The group that seems to weigh most on economic institutions is united by these persons and not only around prominent high bank families.

We have to understand both the weight of this group, with its internal strong and weaker ties, in the institutions, and the limits of this weight, since the large component is always a minority and seems to gradually disappear after 1832. Many of the members of a private network built around the “high bank” chose to invest time in meso-level institutions – and succeeded in being chosen as members – at a given time, but then, either they were less interested in institutions or they were less successful in their careers.

Private networks and institutional careers

The concept of an institutional career seems useful to understand their behaviour. There is a correlation between being a member of the large component and holding multiple institutional positions. 35% of the men with at least two positions are part of the largest component (and 55% of those with at least three positions) whereas only 43% (resp. 22%) are isolates. Here we must probably consider at the same time the economic rewards of institutional participation, but also more individual and abstract rewards, in terms of prestige and access to other types of positions. Historians of the 19th century elite have shown the importance of philanthropic activities or of collecting pictures, for example, for bankers or industrialists (among others, Bergeron, 1991). Being involved in meso-level economic institutions seems to be partly related to the same taste for *fonctions gratuites*, non-utilitarian activities; at the same time, it provides economic advantages. Finally, some less prestigious positions may be understood as a first step in a career.

The members of the largest component seem to have had the best institutional career opportunities. They spent an average 13.2 years as members of at least one of the institutions considered in this paper^{xx}, compared to 11.8 years for members of smaller components and 6.5 years for isolates. That’s why the large component, with only 16% of the population, provides 30% of the years spent by members in the institutions, while the 70% of isolates only account for 52% of years spent. The fact of

having at least one tie in the world of institutions therefore seems useful. Having a large degree, in networks terms, also has a specific effect: the men with one or two ties spend an average 11 years in the institutions, compared to 12.6 for those with three or four ties and 15.6 for the 54 men with five to fifteen ties. The degree seems here more significant than the fact of belonging to the large component.

If we look at careers in each institution separately, the figures are less clear. The main effect of private ties seems to be an easier transition from one institution to another, more than re-election in the same institution. Each one shows a specific pattern. In the Commercial Court, the lowest average durations are found among members of the large component (3.5 years, compared to a general mean of 4 years) and among men with at least 5 ties (3.2 years). And they do not have more chances than the others to become president of the Commercial Court. On the other hand, in the GBBF, the average duration of stay is 8.5 years for isolates, 11.8 years for members of small groups, 18 years for members of the large component and 20.9 years for people with at least 5 ties inside the large component. It seems partly due to an entry at a lower age (especially after 1832 and even more after 1848). In the Chamber of Commerce, in each period, we also find a lower age of election (two or three years under average) for members of the large component, but they don't stay longer in the Chamber. Re-election seems to be more correlated with real involvement in the institutions' activity^{xxi}.

This points in the direction of a hierarchy of institutions, at least from the point of view of members of the large component. If you have many ties, you will invest less time and involvement in institutions like the Commercial Court (the role of judge is very time-consuming, not very prestigious and a majority of cases deal with small, local trade), but you somehow need to begin with this kind of position, even if your network also helps you to enter places like the GBBF at a lower age. It seems (from career paths and qualitative evidence) that the Commercial Court was considered by members of prominent families as a compulsory first step, sometimes described as a *stage* [traineeship], to improve their skills and to gain reputation. The Chamber of Commerce was somewhere in the middle of the hierarchy, between more local and more political institutions^{xxii}. It was probably a first step for some members and an achievement in itself for others.

Giving such details is useful to show that the effect of networks is by no means uniform. It dispels the too simple idea that "capital goes to capital", that any kind of resource may be transformed to any other kind and that every individual's aim is to hold every possible position. Each group probably has a specific institutional strategy and the evolution of the institutions' roles and appointment procedures may induce changes in priorities. It is only thanks to a comprehensive study of the system of institutions, including economic, social and political perspectives and taking into account the scales of individual, group and institution that we may be able to interpret such results.

Having many private ties in the world of economic institutions may have provided a more various institutional career to an individual and sometimes allowed him to start it

at an earlier age. Family reputation or support from inside the institution (in a context of cooptation) appear as substitutes for personal experience in business, skill in writing, etc. The lack of any official certification of economic skills or knowledge (there were few business schools and law faculties practically didn't teach commercial law or economics before the 1870s, see Le Van-Lemesle, 2004) strengthened this effect of reputation conveyed by private networks. But it does not imply that families pursued collective strategies aiming at controlling or influencing institutions or at least at being present inside them (in order to be informed of what was happening and able to promote the family's or firm's interests). Looking for direct successions in each institution may help to investigate this other question. We have seen that the only institutions with a significant weight of private networks were the Chamber of Commerce, the GBBF and maybe the Discount Council. But in fact they experienced, strictly speaking, few direct successions.

The Chamber of Commerce experienced an important turnover because of rules limiting re-election. Such rules offer many opportunities to observe successions, but among ca. 320 elections to the Chamber, 20 at most (6%) may be considered as direct successions between relatives or associates. There was almost no succession after 1820. They were more common in the GBBF. With the same criterion, ca. 20% of elections to this institution may be considered as direct successions, and they are more evenly distributed along time. In the case of the Discount Council, direct successions seem to account for less than 10% of appointments. The General Board was also the only place where such questions were openly spoken of in written records, with candidates speeches to the shareholders calling back to the former position of a father, brother-in-law, etc. (Plessis, 1985). Election by shareholders seems to have resulted in more cases of direct succession than can be found in direct cooptation (as in the Chamber of Commerce). Such a paradox can be explained. In the case of pure cooptation (or appointment), the person(s) who decide generally have access to information on the specific skills and individual opinions of the candidates. On the other hand, the shareholders were not always personally acquainted with the men they had to choose, may have had a more limited understanding of the nature of the GBBF's task and consequently tended to trust in a family or firm name. Direct succession seems to be less the result of deliberate favoritism or personal acquaintance than of a lack of information leading to rely more heavily on symbolic assets. The kind of network built around the high bank (dense, but relying on "not so strong ties") could perfectly fit such needs of reputational information.

IV- The co-evolution of networks and institutions

Anyway, even in the GBBF, 80% of elections cannot be defined as direct successions between two strongly tied persons. Even when mixing several kinds of private ties and various configurations of succession or simultaneous involvement in institutions, 70% of the members of meso-level institutions appear as isolates. And

even among people with at least three different institutional positions, there are still more than 20% of isolates. Some members were the only representatives of their family and firm in the world of institutions. It may have three different meanings. First, the size of the densely knit high-bank milieu may not have been sufficient to provide members to all the institutions studied. This simple explanation is questionable at least in the case of the GBBF and the Chamber of Commerce, and it doesn't account for the evolution of the place of networks. Second, there may have been good reasons to include "people without networks" in the institutions; third, a choice may have been possible, for members of the large component, between transferring their networks in the institutions (by cooptating relatives or associates) and separating networks from institutions.

Using such hypotheses, we can try to understand the evolution that we saw in our data, involving a general decline of private ties among newcomers in meso-level institutions (and between them and their predecessors) and the fading of the large component. What is difficult is to understand both the structure of opportunities (which institutions did exist, what they were able to provide to firms in terms of information or influence on economic policy, what was required to become a member in terms of skills or available time...) and individual or collective aims (for example, did the bankers want to make more profit or to retire and live like gentlemen?). It is difficult, but it helps to escape lazy explanations like "modernization implies less weight for private ties, especially kinship ties". Finding a less dense and structured network in the last period does not mean that "networks do not matter anymore", nor does the structure in the first years deserve to be called "archaic". There are still families, firms (even family firms) and groups trying to control institutions in the end of the 19th century. But career paths, functional links and hierarchy between institutions have changed.

To illustrate some aspects of the evolution leading to the image of "less networks", I will concentrate on three important factors: the specialization of institutions; the concentration of the large component's strategies on the Bank of France; the growing place of careers based on alternative resources, namely expertise and representative character. Then I will suggest a possible interpretation of the general evolution in terms of quest for information.

Effects of the division of institutional labor

The idea of a growing specialization among meso-level economic institutions, starting at the beginning of the 1830s and accelerating after 1852, is supported by qualitative and quantitative examination of what the institutions did as well as by data on individual career paths. Each institution gained new, more routine-like attributions and had to meet more frequently; the number of members often increased, but not in sufficient proportion. For example, from the 1850s onwards, the Chamber of Commerce had to discuss every change in railway rates and many technical questions about weights and measures, which left few time to the discussion of general economic issues. The increase in the number of cases submitted to the Commercial Court led the

judges to separate in more or less specialized “chambers” and to spend more time in the court. Each position became more time-consuming and required more specialized skills; it also implied more internal division of labour, which left less space for “generalists”. At the same time, bank itself was becoming a more specialised activity (more distinct from international trade or insurance for example), so that bankers were perhaps less praised as “experts in everything”. The notion of “expert” of each trade was indeed more and more used.

In addition, new meso-level institutions were created or reinforced to deal with new problems, such as disputes between employers and workers or patent questions. Multiple involvements in many institutions seem to have become at the same time less common and more diverse. There was no longer a typical career path or a simple set of institutions, articulated around the Chamber of Commerce and the Bank of France, that could be “the place to be” for a densely connected economic elite. In my dataset, the men who entered the system after 1848 were much more likely to be elected to only one of the five institutions than before (table 4)^{xxiii}. An increasing division of labor, both between institutions and inside each institution, meant the end of the previous complex institutional careers that members of the high bank network praised so much. Now they had to choose where to invest, and they had less arguments in terms of general competence to keep control on all institutions.

Several hints point at the idea that after 1832 and even more after 1848, they concentrated on the GBBF or left meso-level institutions in general, sometimes to enter the political system more directly (the better chances that they had to become deputies or even ministers should not be overlooked). My micro study of the Chamber of Commerce showed that, although some members of prominent high-bank or tied families kept the influential and visible positions of president or secretary of the Chamber of Commerce during many years after 1832 and even after 1852, they may be seen as exceptions. When they opposed their colleagues on policy matters (for example when François Delessert advocated the law against child labor in the name of philanthropy or when Horace Say pointed at the importance of teaching political economy to merchants, two positions typical for the high bank culture of the 1800s-1830s), there were sharp debates and they only convinced a minority.

The few indicators that we have about the real involvement of members in institutional all-day work point to the same direction, showing a concentration of the large component on the GBBF. Although only half of the *régents* and *censeurs* (in the 1850s and 1860s) whom Alain Plessis (1985) studied were members of the large component, they represented, according to his criteria, more than three quarters of the influential speakers on general matters, probably weighing disproportionately on the Bank’s policy and leaving technical, routine discussions to their colleagues. In the Chamber of Commerce, my study of the relationships between network position and involvement in all-day work points to the same direction. Among the first members of the Chamber who entered it in 1803, those who became the founders of the large component were much more active than their colleagues in subcommittees or in terms

of number of meetings attended each year. Despite of their multiple economic and institutional involvements, they found time to really participate in the Chamber's advisory activity; on the contrary, their followers were less active after 1832^{xxiv}.

During the first decades of the century, the meso-level institutions' attributions were not very clearly defined, because a new institutional system had to be created after the abolition of old regulations during the Revolution. But this experimental period, when many individuals, families and firms did not know exactly what to expect from membership in each institution, had an end. In fact, the evolution was rather incremental, even if turning points around 1832 and around 1848-1852 may be found. But around 1870, a new system based on increased institutional specialization was born that did not leave place anymore to an interaction between private networks (especially around the high bank) and institutional networks created by complex careers.

The birth of chambres syndicales: a new form of organization

If we finally concentrate on more strictly economic phenomena, how is it possible to understand the same evolution? "Networks" may be seen as informal institutions allowing to lower transaction costs and/or information asymmetries. It must be added that they are often very useful if you want to confiscate information. Here it may be argued that in a context of economic uncertainty (especially during the Empire wars, when trade prohibitions very often changed) as well as "institutional uncertainty" (uncertainty on where it was important to be present), building a network based on private ties between family firms and on multiple institutional involvements was very efficient for the high bank and the merchants and industrialists around it. Being present in meso-level institutions, even without controlling their decisions, may have been crucial to get insider information.

In addition to information coming from the government (when it asked for advice on its projects, thereby revealing them) or from economic actors in general (who, when they asked the Discount Council for credit or when they brought their cases to the Commercial Court, provided information on the state of their business), meso-level institutions could provide information coming from the other members themselves. This may have been a reason to maintain a certain amount of diversity among members, although cooptation would have authorized one or two family firms to control the institutions. Including people with whom you were more remotely related (whose merit you knew, but with whom you did not necessarily share all interests) could allow you to create a kind of club in order to exchange certain kinds of information: the kind that you did not want to keep only for your firm, but that you did not want to become public either. Keeping a small place for isolates who had proved their merit (for example in the Commercial Court) and who could give information on specialized trades could even make sense. This interpretation is probably accurate for the Chamber of Commerce in 1804-1832, when evidence shows, for example, that many informal discussions about topical economic issues, rumors etc. took place in the end of the meetings.

But this closed system did not last very long, because of changes in insiders' strategies of as well as because of outsider protests. An important factor was probably the differentiation between banking, industry and long-distance trade, particularly with the increasing autonomy of "exporters" in the 1840s: they created specific clubs to exchange information on new markets (like China)^{xxv}. At the same time, the idea of a spontaneous organization of trades was no longer associated with archaic and inefficient *Ancien Régime* traditions, but was openly discussed among economists, bankers etc. as well as in socialist or Christian circles (Lemerrier, 2003, Kaplan and Minard, 2004, Rosanvallon, 2004). Even in the Chamber of Commerce, from 1849 on, the word "*représentativité*" (representative character) became openly used and lists of candidates mentioned trade specialties. Industrial exhibitions seem also to have played a key role in creating ties between middle-size merchants and industrialists and making them think about new, unofficial organizations. The main union of unions (*Union nationale du commerce et de l'industrie*, UNCI), uniting dozens of *chambres syndicales* (from flowermaking to gas lighting) was created in 1859 as a result of these experiments. Along with other, isolated *chambres syndicales*, it managed to control access to the Chamber of Commerce and the Commercial Court^{xxvi} from ca. 1867 on. The choice of members had now to be based first on a balance of trade interests and only secondarily on personal merit.

One of the main aims of the new *chambres syndicales* was to deal with information problems: for example, they asked their members to report on the credit situation of their clients, and this information was only given to other members. UNCI, thanks to its size, could provide many similar services: information from foreign correspondents, legal information and help (about insurance, patent litigation, etc.) and a laboratory for chemical analysis. *Chambres syndicales* were generally based on cooptation, so that they somehow kept information private, but they were more open than networks only based on families or firms; in the UNCI, there were even information exchanges and common services between various trades. It had took some time to find an institutional form that was neither too small (like the *Cercles* in the 1840s with their high annual dues) nor too large (you didn't want to pay for something that everyone would have) and that was tolerated by the authorities, before trade unions were officially authorized. But it was finally created.

At the same time, private information enterprises such as financial journals and services enterprises such as patent offices also multiplied from the 1830s-1840s onwards, and the State tried to create statistical information on the economy in general. It may be argued that this diversification of information sources, along with the fact that being a member of a meso-level institution more and more implied to concentrate on technical matters and less and less to enjoy discussion with other members of the elite, reduced the "club function" of these institutions. It raises the question of the nature of the new sources and ways of information exchange for high bank families: maybe the answer is to be sought in the new kind of selective network built by interlocking directorates of stock companies from the 1860s onwards. As for the new men from *chambres syndicales*, they made a different use of meso-level institutions, either as

forums to promote sector-based interests or as tools to create public services useful for small and medium business.

Even if more private, strong ties probably kept important roles in some sectors of the economy, the system of meso-level institutions was less and less embedded in them; it relied on more impersonal notions such as *représentativité* and on more formal private organizations such as *chambres syndicales*. Inside the *chambres syndicales*, family or partnership ties may well have played an important role (for cooptation of new members, choice of the president, etc.), but this role was now concentrated at the level of the most basic organization. Meso-level institutions were part of a division of labour where what mattered was the knowledge of a particular economic sector: they were no longer another place to meet each other and the good place to meet some outsiders for high bank families. It does not mean that institutions became more “objective” or “efficient”: they became the place for a balance of particular interests and they still could provide insider information and opportunities to their individual members. But the boundaries between institutions and private networks were different.

Conclusion

Studying the evolution of a private network between institution members helps to understand the available choices and the strategies chosen in order to answer general problems of transaction costs reduction and information asymmetries in a changing economic and institutional context. I stressed the diversity of possible articulations between investment in private ties and in formal institutions – with the unofficial *chambres syndicales* as a mixed solution. The actors may have chosen only one of these strategies or tried to combine them.

The purpose of this paper is partly methodological. Facing the growing use of the word “network” by historians, it may be useful to differentiate between sorts of networks and to investigate their origins and consequences. Assessing what formal analysis allows us to understand – and what it cannot do – was another aim^{xxvii}. Quantitative results and graphic illustrations appear useful to retrace a global structure and to give some evidence on the weight of a specific network on a specific behavior. But, like every kind of formalization, this method is very sensitive to choices in data coding; more generally, it is only useful if the researcher has a substantive knowledge of the field. Changing scales is one interesting thing that may be done with network analysis: it is useful to confront the points of view of the whole structure, of small groups and of individuals. It requires qualitative information on each scale.

In addition to methodological lessons, this attempt at a systematic treatment of the “networks question” gives original results not only about meso-level economic institutions and institutional careers, but also about business itself. Even in the already well-studied field of the high bank, it helps us to understand the limits of this milieu and

the chronology of its changing institutional strategies. More generally, the network study falsifies simple assumptions like “social capital allows election or appointment to any position”, allowing a more precise test of various hypothesis.

Such a study raises questions of comparative nature. It would be very useful to conduct similar research particularly in smaller French cities. It has often been argued that the larger the city, the more anonymous the personal relationships: does this hold for business elites? On the other hand, information problems were probably very specific in Paris, which may have been the source of specific institutional strategies and may explain why a union of *chambres syndicales* appeared very early in the capital. More generally, my results, for example on the proportion of successions or on the effects of networks on election age, may serve as references for other studies that would address the question of *notables* in political or scientific institutions as well as in the world of business in 19th century France. An enormous work has been done in collecting biographies of elite members, but it is often difficult to extract general results from such data. Here I suggest possible ways to treat them in order to answer to precise historical questions.

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Table 1

The decrease in the number of ties

Date of first membership in any institution	Average degree in the whole network
1785-1803	3.8
1804-1831	3.6
1832-1848	3.1
1849-1871	2.9

Degree = the number of different persons to whom the person is tied.

Date of first membership in any institution	Percentage with at least one strong family tie
1785-1803	17.4%
1804-1831	15.0%
1832-1848	14.8%
1849-1871	8.2%

Strong family tie = father-son, brother, grandfather-grandson, uncle-nephew, cousins.

Date of first membership in any institution	Percentage with at least one marriage tie
1785-1803	23.9%
1804-1831	13.8%
1832-1848	7.7%
1849-1871	7.8%

Date of first membership in any institution	Percentage with at least one association tie
1785-1803	32.6%
1804-1831	20.2%
1832-1848	10.9%
1849-1871	7.1%

Date of first membership in any institution	% isolated (in the whole network)	% in small components (in the whole network)	% in the large component (in the whole network)
1785-1803	48%	15%	37%
1804-1831	63%	14%	23%
1832-1848	77%	13%	10%
1849-1871	83%	10%	7%

Table 2

Percentage of the members of each institution in a given year who are tied to at least one member of any institution in the same year

	1803	1823	1843	1863
Chamber of Commerce	81%	60%	20%	24%
Discount Council	38%	42%	45%	42%
General Board of the Bank of France	33%	52%	70%	38%
Municipal Council	30%	21%	11%	6%
Commercial Court	22%	8%	15%	6%
Whole population	37%	29%	24%	15%

Table 3

Percentage of the member-years of each institution due to members of the large component and to isolates

		1800-1871	1800-1831	1832-1848	1849-1871
Chamber of Commerce	Component	45%	78%	29%	21%
	Isolates	35%	9%	52%	51%
Discount Council	Component	32%	44%	24%	22%
	Isolates	31%	38%	32%	20%
Commercial Court	Component	11%	24%	6%	4%
	Isolates	75%	58%	82%	86%
General Board of the Bank of France	Component	64%	71%	66%	53%
	Isolates	15%	15%	15%	15%
Municipal Council	Component	12%	22%	14%	4%
	Isolates	73%	56%	71%	85%
<hr/>					
Whole population	Component	30%	45%	25%	16%
	Isolates	52%	37%	57%	62%

This table takes into account the duration of stay of each member in each institution. For example, if one person is in the large component and spends 10 years in the Chamber of commerce and 20 years in the GBBF between 1800 and 1831, he will give 10 and 20 member-years to the component; if one isolate spends only 2 years in the Commercial Court, he will give 2 member-years to the isolates.

Table 4

Percentage of the members of each institution who have also been members of a least one other institution

Date of first membership in any institution	1785-1803	1804-1831	1832-1848	1849-1871
Chamber of Commerce	92%	87%	97%	61%
Discount Council	72%	67%	47%	89%
Commercial Court	61%	39%	33%	18%
General Board of the Bank of France	53%	68%	53%	26%
Municipal Council	32%	34%	31%	12%
Whole population	34%	28%	25%	12%

People who have been members of several institutions appear in more than one line. On the contrary, in the whole population, they only count for one. That's why the figures for each institution and for the whole population may not seem consistent at first glance.

Key to the labels used in the network graphs

Label	Last Name	First Names
aguesseau	Aguesseau d'	Henri Cardin Jean Baptiste
akermann	Akermann	François Adolphe
albert	Albert de Luynes d'	Louis Joseph Charles Amable
aligre	Aligre d'	Etienne Jean François Charles
andrea	André	Louis Alfred
andred	André	Dominique Isabeau
ardoin	Ardoin	Jacques Augustin Joseph Anne
argout	Argout d'	Antoine Maurice
argoutp	Argout d'	Apollinaire Antoine Maurice
aubeag	Aubé	Ambroise guillaume
aubég	Aubé	Guillaume
audenf	Audenet fils	
audenp	Audenet père	Jean
bacot	Bacot	
baile	Baillièrè	Emile
bailjb	Baillièrè	Jean Baptiste
bartholdi	Bartholdi	Jacques Frédéric
bastar	Bastarrèche	Pierre Léon
baudon	Baudon	Pascal
bayvet	Bayvet	Francois Pierre
bazin	Bazin	Charles
beau	Beau	
beaua	Beau	Alexis Emilien
beauj	Beau jeune	
bellange	Bellangé	Pierre Louis
berard	Berard	Auguste Simon Louis
berthier	Berthier	Charles Louis
bertin	Bertin-Devaux	Louis Francois
bidermann	Bidermann	Jacques
billiet	Billiet	Pierre Joseph
boigues	Boigues	Louis
boisgelin	Boisgelin de	Alexandre César Joseph
boschf	Boscheron fils	Guillaume
boschj	Boscheron	Jacques Guillaume Raphaël
boullee	Boullée	Claude
breton	Breton	Louis Henri
bricogne	Bricogne	Athanase Jean Baptiste
brochant	Brochant	
buffault	Buffault	Alphonse Jean
busoni	Busoni fils	
camba	Cambacérès de	Marie Pierre Jean Hubert
cardon	Cardon	Jean Bernard
carié	Carié	Henry Liévain
carré	Carré	
caylus	Cailus	Louis Clément
caylusb	Caylus baron	
chaptal	Chaptal	Jean Baptiste Marie
charmet	Charmet	Antoine
cheuvF	Cheuvreux	François Casimir
cheuvJPC	Cheuvreux	Jean Pierre Casimir
chevals	Chevals	Jacques Philippe
christofle	Christofle	

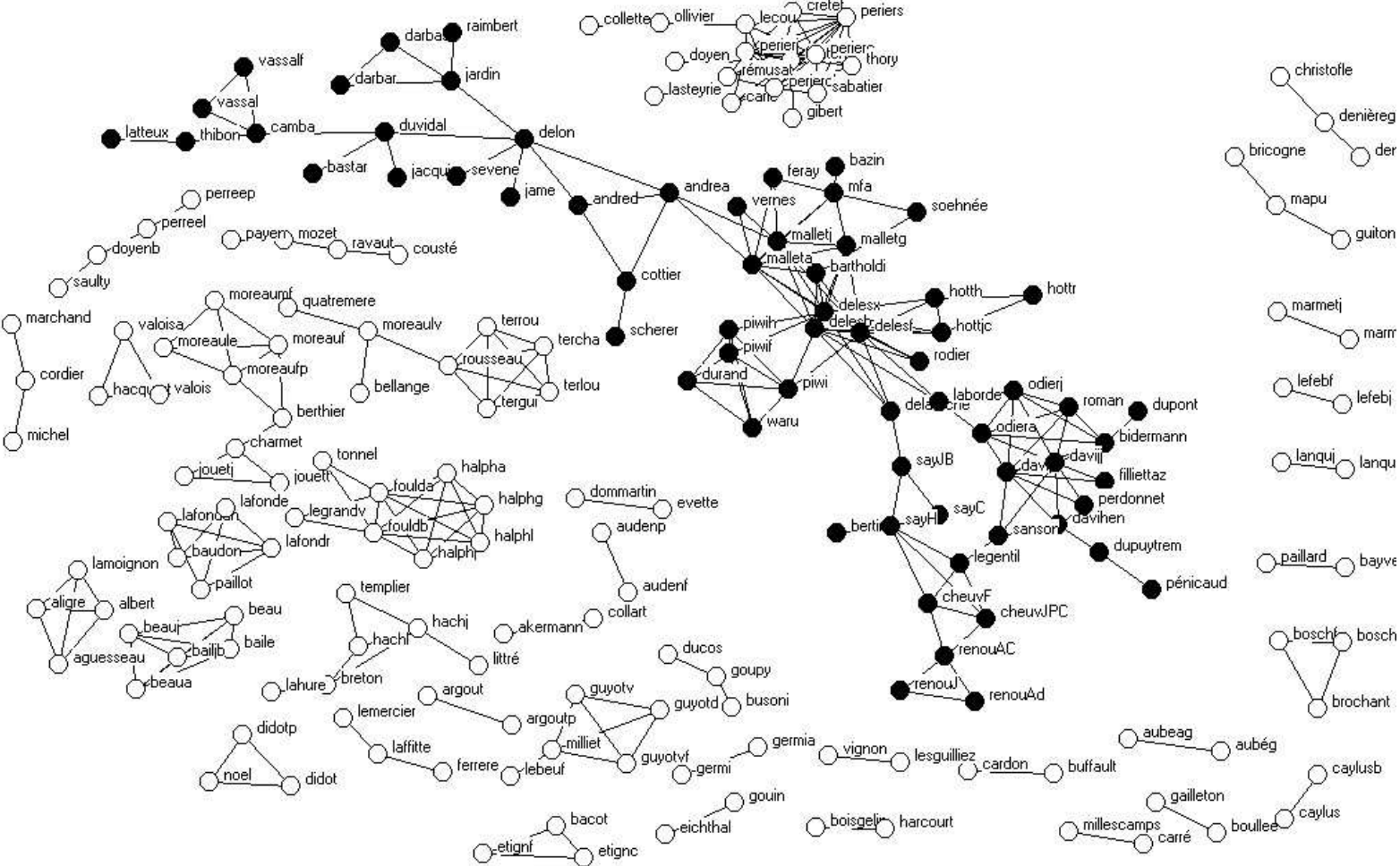
collart	Collart-Dutilleul	Alexandre Jules
collette	Collette de Baudicour	Théodule
cordier	Cordier	Louis Francois
cottier	Cottier	Adolphe Pierre Francois
cousté	Cousté	Joseph Désiré
cretet	Créret cte de Champmol	Emmanuel
darbar	Darblay	Auguste Rodolphe (aîné)
darbas	Darblay	Aime Stanislas (jeune)
davihen	Davillier	Joseph Henri
davijc	Davillier	Jean Charles Joachim
davijj	Davillier	Jean Antoine Joseph (aîné)
delaistre	Delaistre	Bernard Jean Etienne Raymond
delaroche	Delaroche	Hippolyte dit Paul
delesb	Delessert	Jules Paul Benjamin
delesF	Delessert	Francois Marie
delesx	Delessert	
delon	Delon	Louis
deltuf	Deltuf	Antoine Octave
denièreg	Deniere	Guillaume
denièrej	Denière	Jean-François
desnoeux	Desnoeux de Saint-Julien	Jérôme Charles Georges
desprez	Desprez	Médard
didot	Didot	Ambroise Firmin
didotp	Didot (Firmin-)	Paul
dommartin	Dommartin	
doyen	Doyen	Charles Martin
doyenb	Doyen (baron)	Charles Pierre
ducos	Ducos	Joseph Basile
dupont	Dupont de Nemours	Pierre Samuel
dupuytrem	Dupuytrem	Louis
durand	Durand	François Marie Adolphe
duvidal	Duvidal de Montferrier	Jean Jacques Philippe Marie
eichthal	Eichthal d'	Adolphe
etignc	Etignard de Lafaulotte	Claude Louis Simon
etignf	Etignard de Lafaulotte fils	
evette	Evette fils	
feray	Feray	Ernest
feré	Fere	Victor Hyacinthe
ferrere	Ferrere-laffitte	
filliettaz	Filliettaz	Marc Jacob
flory	Flory	Guillaume Henry
fontenill	Fontenillat	H Frédéric
foulde	Fould	Achille/ père
foulde	Fould	Benoit
gailleton	Gailleton	Joseph
ganneron	Ganneron	Auguste Victor Hippolyte
germain	Germain	Jean Pierre
germi	Germiny Lebegue cte de	Charles
germia	Germiny de	Adolphe
gibert	Gibert	Guillaume Toussaint
gisquet	Gisquet	Henri Joseph
gouin	Gouin	Ernest Alexandre
goupy	Goupy	Guillaume Louis Isidore
gros	Gros	
guerin	Guérin de Foncin	Jean Francois

guiton	Guiton	Barthelemy
guyotd	Guyot Delisle	Sébastien
guyotv	Guyot de Villeneuve	
guyotvf	Guyot de Villeneuve	François Pierre
hachj	Hachette	Jean Georges
hachl	Hachette	Louis
hacquart	Hacquart	André-François
halpha	Halphen	Anselme
halphg	Halphen	Germain
halphj	Halphen	Joseph
halphl	Halphen	Georges Léopold
harcourt	Harcourt d'	Charles Louis Hector
hotth	Hottinguer	Henri
hotjtc	Hottinguer	Jean Conrad
hottr	Hottinguer baron	Rodolphe
jacqui	Jacquinot de Pampelune	Claude François Joseph Catherine
jame	Jame	Jean Baptiste
jardin	Jardin jeune	
jouetj	Herman	Antoine Edouard ou Edmond
jouett	Jouet	Théodore
labbe	Labbé	Louis
laborde	Laborde de	Louis Joseph Alexandre
laffitte	Laffitte	Jacques
lafondan	Lafond	Antoine Narcisse
lafonde	Lafond	Etienne
lafondr	Lafond	Ernest
lahure	Lahure	Louis Auguste
lamoignon	Lamoignon de	Anne Pierre Chrétien
lanque	Lanquetin	Elie
lanquj	Lanquetin	Jacques Séraphin
larreguy	Larreguy	J
lasteyrie	Lasteyrie du Saillant de	Ferdinand Charles Léon
latteux	Latteux	Louis
lebaudy	Lebaudy	Gustave
lebeuf	Lebeuf	Louis Martin
lecou	Le Couteux Canteleu	Jean Barthélémy
lefebf	Lefebvre	Jacques Gérard Francis
lefebj	Lefebvre	François Gilbert Jacques
legentil	Legentil	Charles
legrandv	Legrand de Villiers	Auguste Louis Adèle
lemercier	Lemercier de Nerville	JJ
lesguilliez	Lesguilliez	Charles
lesourd	Lesourd	Louis
letellier	Letellier-Delafosse	Pierre Louis
litré	Litré	Maximilien Paul Emile
malleta	Mallet	Alphonse
malletg	Mallet de Chalmassy	Guillaume
malletj	Mallet	James (Adolphe Jacques)
mapu	Martin Puech	Jean Henry
marchand	Marchand	Louis
marmetj	Marmet	Jean Louis Ambroise
marmetp	Marmet	Paulin
mfa	Martin fils d'André	Claude Etienne
michel	Michel de Trétaigne	Jean Baptiste
millescamps	Millescamps	Louis Théophile

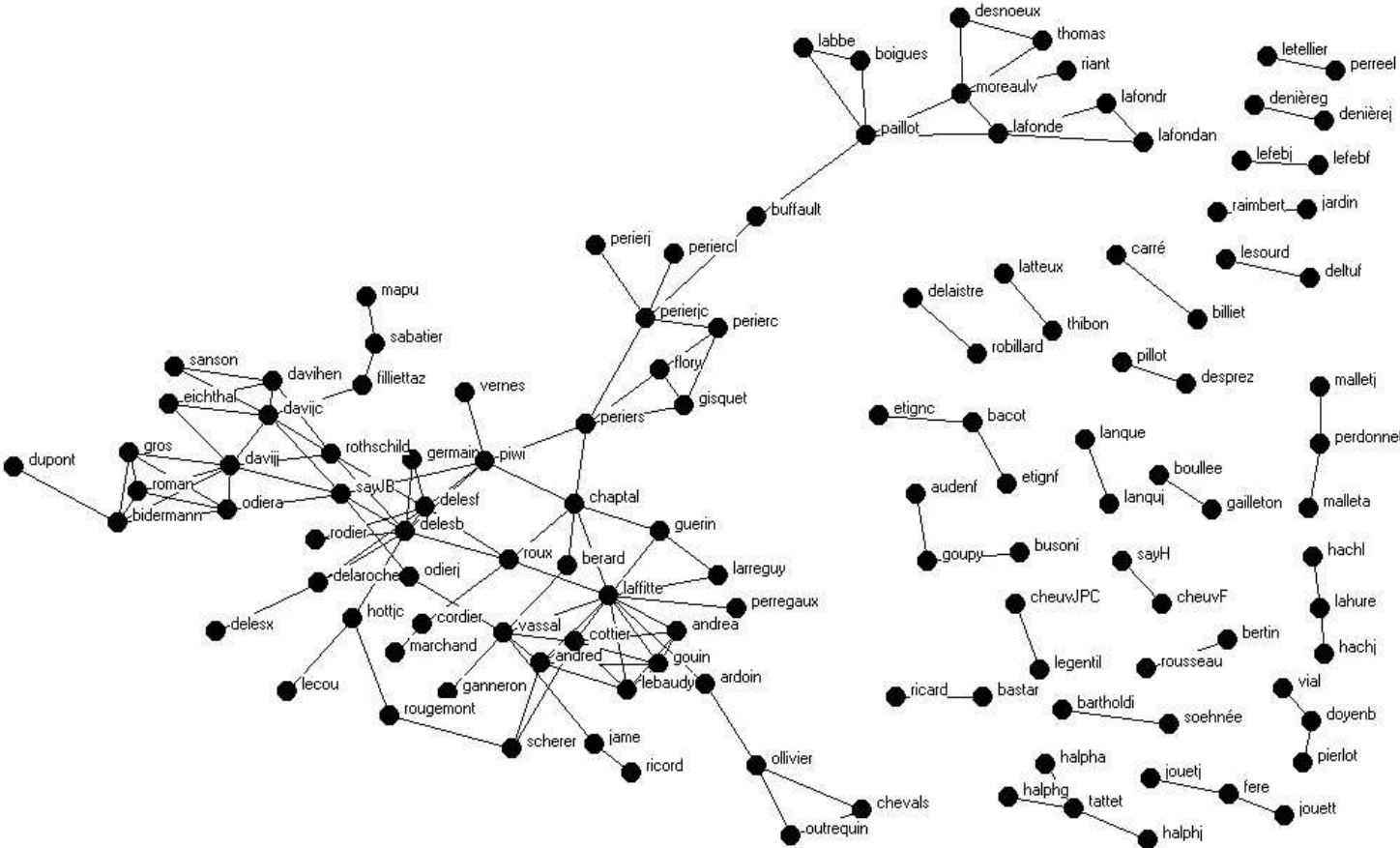
milliet	Milliet	Gratien
moreauf	Moreau	Frédéric
moreaufp	Moreau père	Frédéric
moreaule	Moreau	Louis Ernest
moreaulv	Moreau	Louis Victor
moreaumf	Moreau	Martin Ferdinand
mozet	Mozet	Hyacinthe Charles
noel	Noel Desvergers	Marin
odiera	Odier	Antoine
odierj	Odier	James (Jacques Antoine)
ollivier	Ollivier	Augustin Charles Alexandre
outrequin	Outrequin	Francois Jacques
paillard	Paillard	Victor Alexandre
paillot	Paillot	Pierre
payen	Payen	Alphonse
pénicaud	Pénicaud	Alphonse
perdonnet	Perdonnet	
perierc	Perier	Casimir Pierre
periercl	Perier	Claude
perierj	Perier	André Jean Joseph
perierjc	Périer	Jacques Constantin
periers	Perier	Antoine Scipion
perreel	Perree	Louis Ferdinand
perreep	Perrée	Pierre Nicolas
perregaux	Perregaux	Jean Frédéric
pierlot	Pierlot	Louis
pillot	Pillot aîné	
piwi	Pillet-Will	Michel Frédéric
piwif	Pillet-Will	Frédéric
piwih	Pillet-Will	Hyacinthe Louis Alexis Constant
quatremere	Quatremère de Quincy	Antoine Chrysostome
raimbert	Raimbert	Estave
ravaut	Ravaut	François Louis
rémusat	Rémusat de	Charles François Marie
renouAC	Renouard	Augustin
renouAd	Renouard	Adrien
renouJ	Renouard	Jules
riant	Riant	Leon Louis
ricard	Ricard	Georges Antoine
ricord	Ricord	
robillard	Robillard	Jacques Florent
rodier	Rodier	
roman	Roman	Jacques
rothschild	Rothschild de	Alphonse
rougemont	Rougemont	
rousseau	Rousseau	Jean Joseph
roux	Roux	Vital
sabatier	Sabatier	Guillaume
sanon	Sanson Davillier	Alexandre Joseph Toussaint
saulty	Saulty de	Philippe
sayC	Say	Constant
sayH	Say	Horace Emile
sayJB	Say	Jean Baptiste
scherer	Scherer	Daniel Henry
sevene	Sévène	Jean Auguste

soehnée	Soehnée	Jean Michel
tattet	Tattet aîné	
templier	Templier	
tercha	Ternaux	Charles
tergui	Ternaux	Guillaume Louis (aîné)
terlou	Ternaux	Louis Mortimer
terrou	Ternaux-Rousseau / Ternaux aîné	Nicolas
thibon	Thibon	Louis Charles
thomas	Thomas	Nicolas Toussaint
thory	Thory	
tonnel	Le Tonnelier de Breteuil	Achille Charles Stanislas Emile
valois	Valois	Auguste Jacques Omer (jeune)
valoisa	Valois aîné	
vassal	Vassal	Jacques Claude Roman
vassalf	Vassal fils	Antoine
vernes	Vernes	Charles
vial	Vial	Joseph Marie
vignon	Vignon	Pierre
waru	Waru de	Adolphe

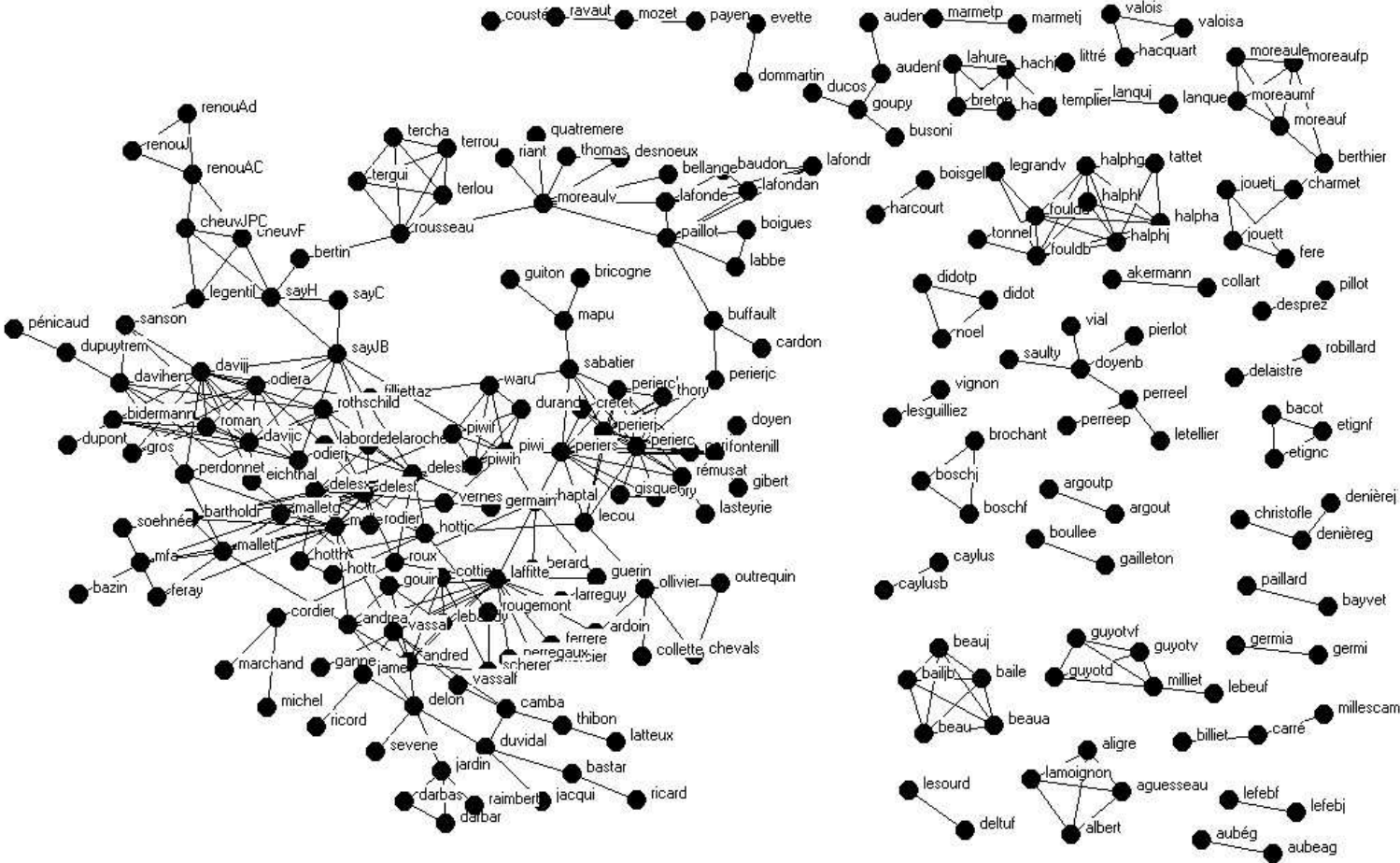
Graph 1: Ties father-son, brothers, grandfather-grandson, uncle-nephew, cousins and marriage ties (black nodes = largest component)



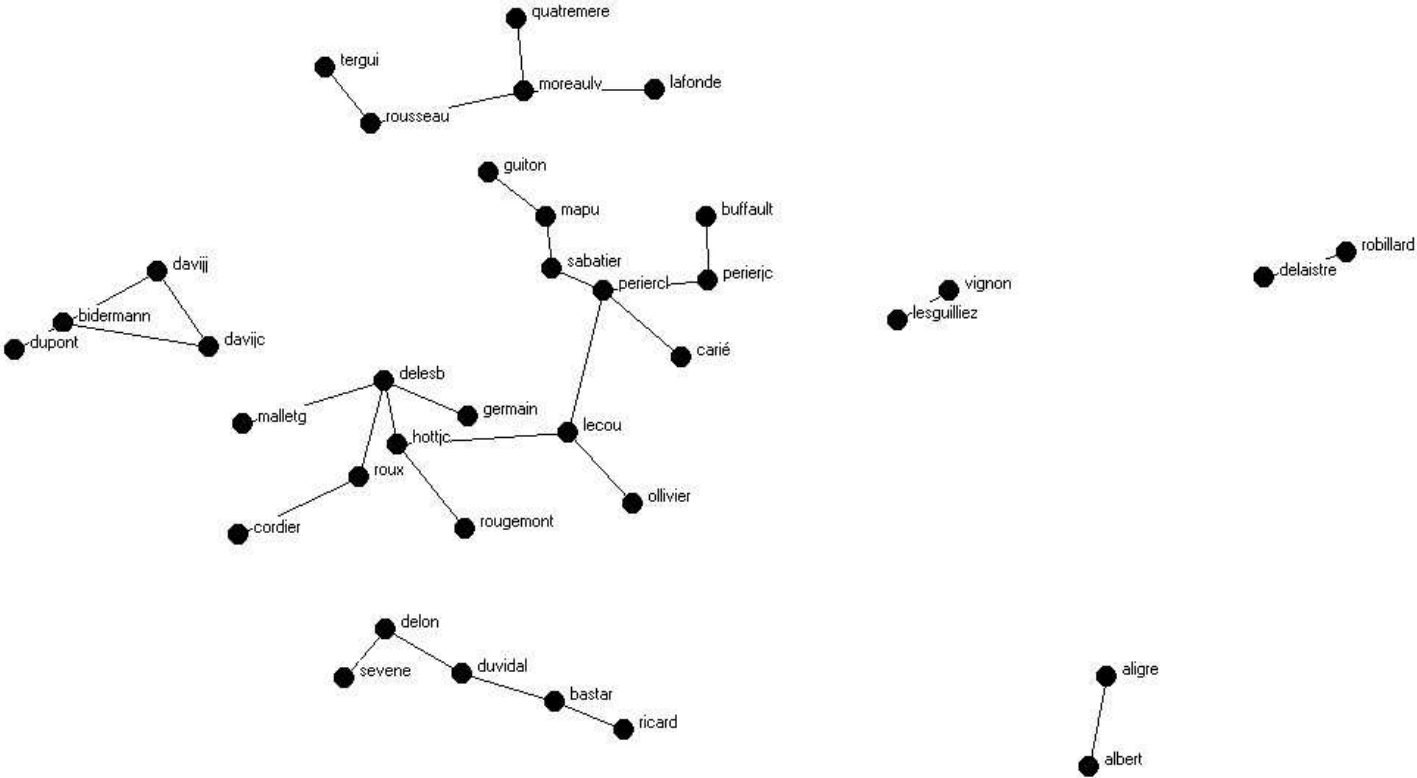
Graph 2: Association ties



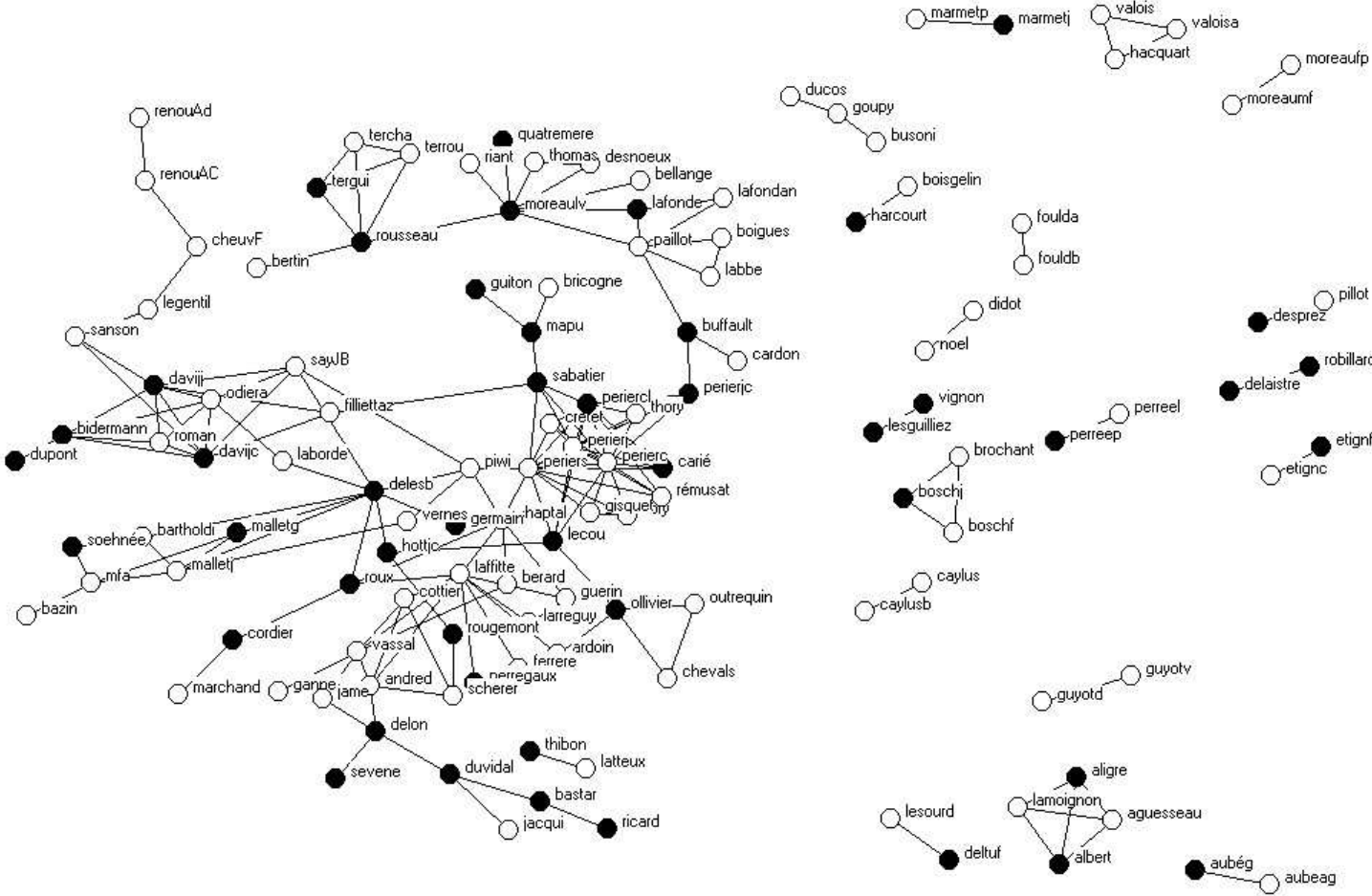
Graph 3: All kinds of ties (“whole network”)



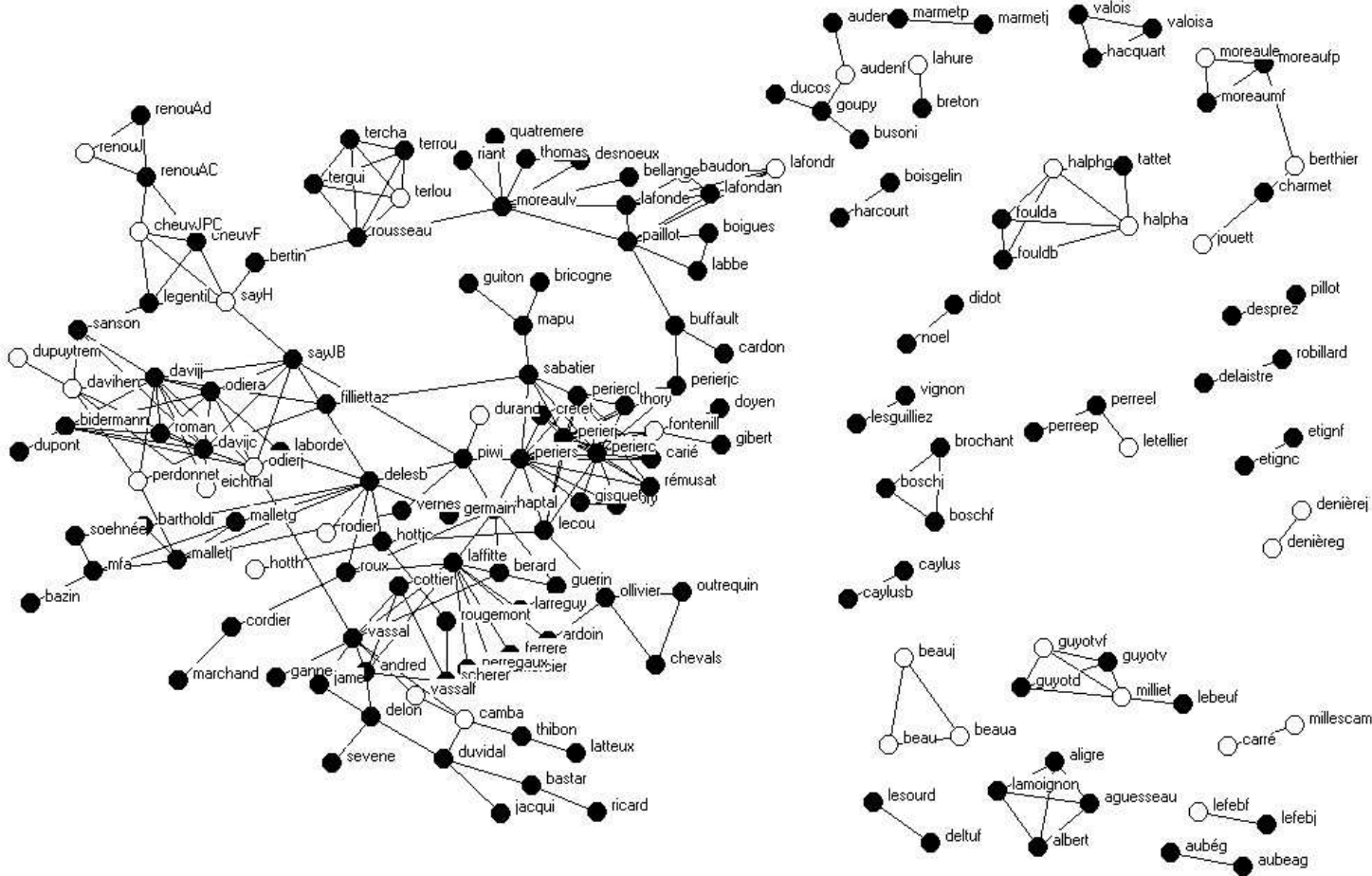
Graph 4: All kinds of ties, persons elected/appointed to their first position in 1785-1803



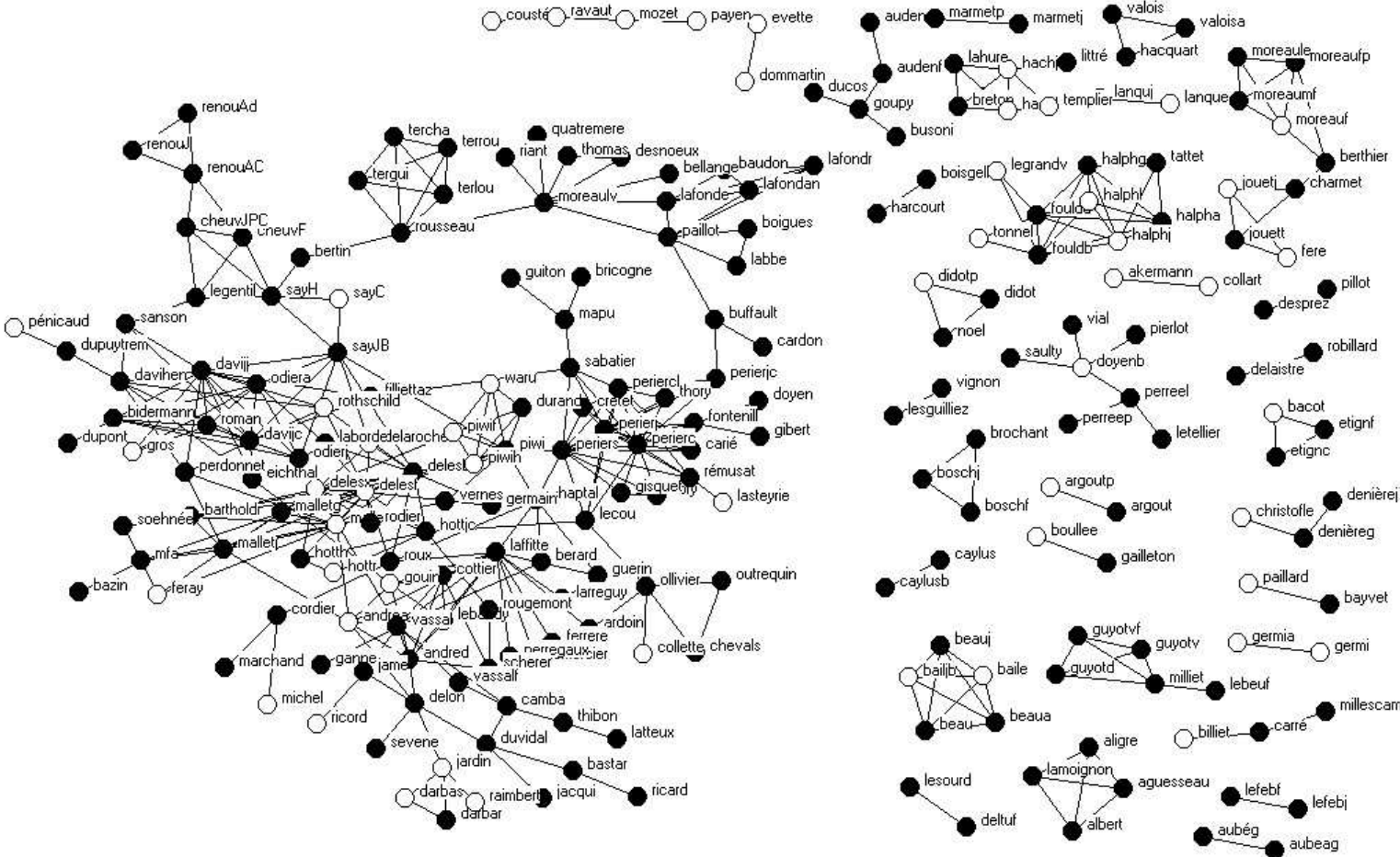
Graph 5: All kinds of ties, persons elected/appointed to their first position in 1785-1803 (black) or 1804-1831 (white)



Graph 6: All kinds of ties, persons elected/appointed to their first position in 1785-1831 (black) or 1832-1848 (white)

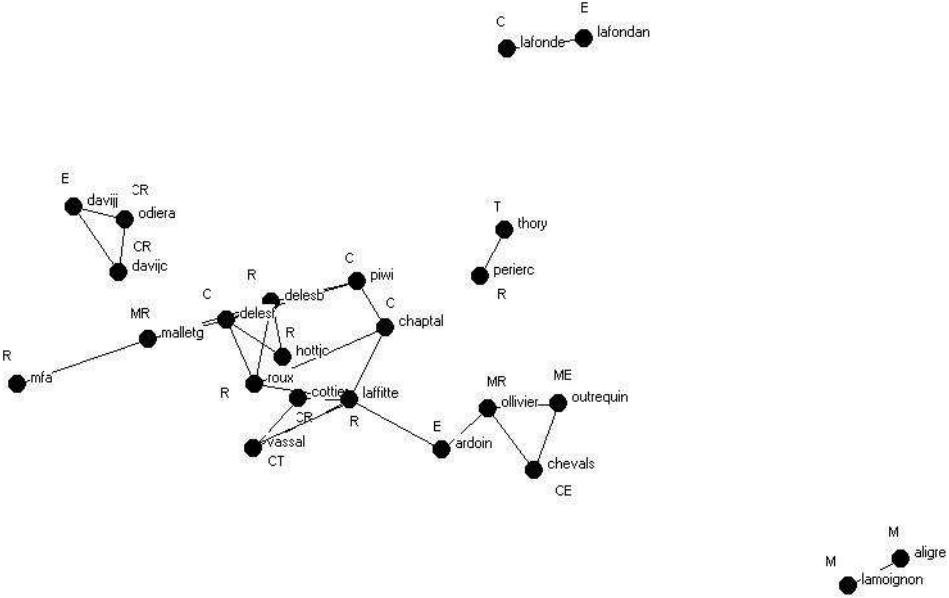


Graph 7: All kinds of ties, persons elected/appointed to their first position in 1785-1848 (black) or 1849-1871 (white)



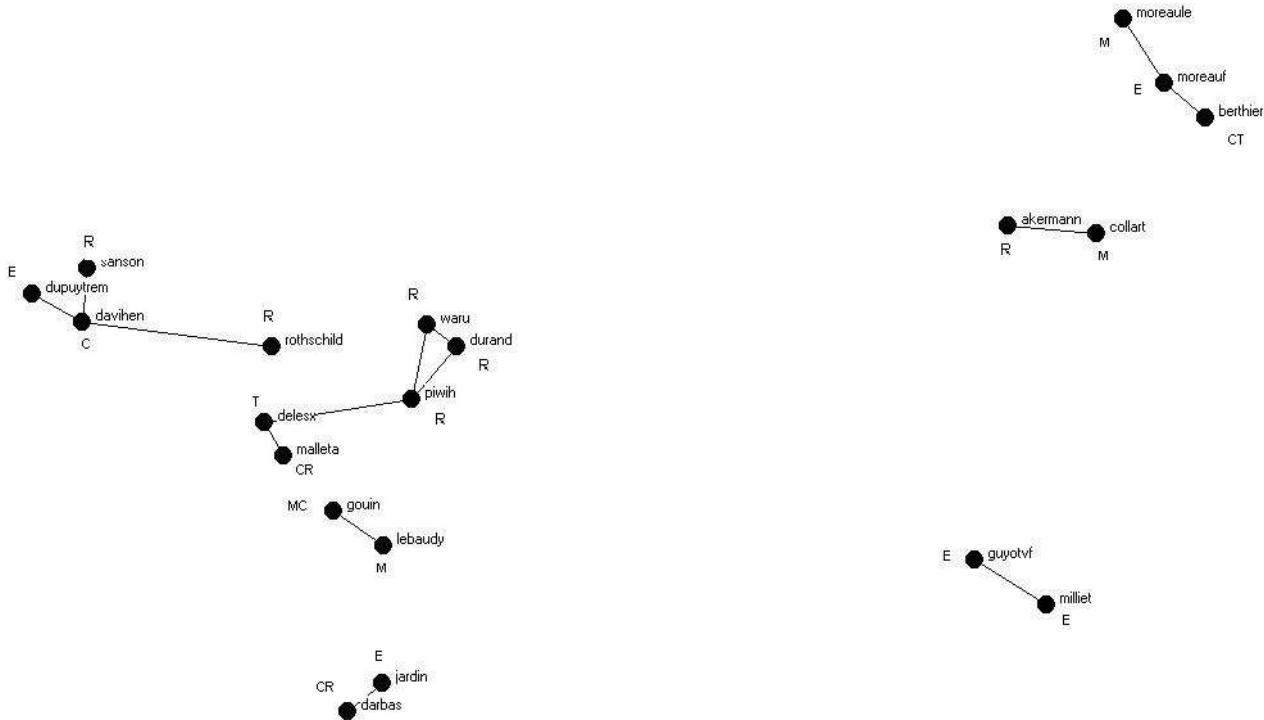
Graph 8: All kinds of ties among members in charge in 1823

C = Chamber of Commerce, E = Discount Council, M = Municipal Council, R = General Board of the Bank of France, T = Commercial Court



Graph 9: All kinds of ties among members in charge in 1863

C = Chamber of Commerce, E = Discount Council, M = Municipal Council, R = General Board of the Bank of France, T = Commercial Court



ⁱ A preliminary version of this text was given in Le Creusot, Business History Conference, June 2004. It gives more details on the case study and more descriptive results, including graphs.

It may be found here:

<http://www.h-net.org/~business/bhcweb/annmeet/program04.html> (panel 27)

Comments on both versions are welcome.

ⁱⁱ Many businessmen actually turned down election to the Commercial Court, but it hardly ever happened in the other institutions studied.

ⁱⁱⁱ An “institution” is here defined by the existence of a particular group of members with specific meetings aimed at fulfilling a particular role. Therefore, the Seine District Council (*conseil général*) and the Paris Municipal Council are considered as one institution, which I call “Municipal Council”, although there were in fact sometimes only one council, sometimes two (but with a majority of common members and meetings). On the contrary, I treat the General Board and the Discount Council of the Bank of France as two different institutions because they had different members, chosen for different missions and according to different rules.

^{iv} There are no serious historical studies of the French Commercial Courts, especially in the 19th century. I am now working in this field of research. A general view is given by Coutant (1998). For more detail and lists of members Legrand (1905) is still useful.

^v The Councils archives burnt in 1870, which has caused a lack of historical research (despite of the existence of printed documents). Stephen Sawyer is currently working on Paris Municipal Council in the 19th century. Member lists and biographical information are given by Pronteau (1958, 1960) and Fleury and Gille (1972). General ideas about the Parisian administration may be found in Roussier (1970) and Tulard (1976).

^{vi} The boards of the Bank of France have been very precisely studied by Szramkiewicz (1974) and Plessis (1982 for the Discount Council, 1985 for the General Board). Unfortunately, these books do not treat the 1815-1848 period.

^{vii} The 15 members of the year n elected the 5 new members for the year $n+1$. Cooptation could have turned to infinite re-election of the same people. To hinder that, before 1832, a one-year interval was compulsory after each 3-years term. After 1832, it was possible to be immediately re-elected one time, but the one-year interval remained compulsory after 6 years, 9 years etc.

^{viii} The previously mentioned BHC paper discusses some individual examples.

^{ix} Another problem is related to the difficulty of dating a network. Even if I only include long-term partnerships, some of the ties in the database link “former associates”. What do they share? Probably a common knowledge of the economy and of each other, not necessarily anything else. Dating the ties raises other problems: a father-son tie begins with the birth of the son, but ties between relatives by marriage depend on the wedding date. I have chosen not to count family ties created after the persons entered the institutional system – and in fact I have found that the vast majority of ties were created before. Part of such problems may be solved in the future, but many are intrinsic to network data. The best solution to deal with them is to use changing scales and to confront quantitative results with qualitative checking.

^x Archives de Paris, DIU3 1.

^{xi} It must be stressed that on all network graphs, the only rigorously defined thing is the existence or non-existence of a line between each pair of nodes. The position of the nodes on paper, the distance between two nodes etc. are arbitrary (they are in fact chosen partly by the computer and partly by the researcher to make the graph readable). I found it useful to give such pictures so that the reader gets a general idea of the structure of the networks, but I am well aware of problems related to graph interpretation. That’s why I always try to give a more quantitative idea of network parameters.

^{xii} For example Gustave-Emmanuel Roy, *1823-1906. Souvenirs*, Nancy, impr Berger-Levrault et cie, 1906.

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- ^{xiii} A clique is a set of people among whom all potential ties actually exist (each person is related to all the others).
- ^{xiv} I tried various techniques to test its robustness, such as deleting people with only one tie or people who were members of only one institution (because they are less well-documented), but the general picture and particularly the component's form remain unchanged.
- ^{xv} The result doesn't seem to be the product of the random choice of the year: the 1827 graph, for example, is extremely similar, despite of an overall turnover of 45% between the two dates.
- ^{xvi} The 1843 graph is already quite similar.
- ^{xvii} The important place of members of « small components » (members of families or associations that are not connected to the large component) inside the Discount Council after 1832 and the Chamber of Commerce and GBBF after 1849 is not easy to explain and should be investigated in the future.
- ^{xviii} For the councils of the Bank of France, I only used the qualities declared in the Bank's archives themselves. For the Chamber of Commerce, I used a variety of sources.
- ^{xix} The degree is the number of different persons to whom one given person is directly tied.
- ^{xx} Here I only take into account the years between 1800 and 1872, so that a small part of the data is right-censored.
- ^{xxi} I have tried calculations using rates of absenteeism during the first term and involvement in subcommittees. Since there are missing data and the population is very small, I do not give here a detailed account of the results.
- ^{xxii} For example, in terms of taxes paid by the members in 1845 or of proportion of members of 1803-1852 becoming deputies, the Chamber stays between the Commercial Court and the Discount Council on the one hand, the GBBF and the Municipal Council on the other hand. About the institutional hierarchy, see Lemerrier, 2003.
- ^{xxiii} The Discount Council was an exception, with more erratic figures. Despite the pioneering work by Alain Plessis (1982), this institution would deserve a specific, long-term study. Plessis points that in 1870, the question of the representation of precise trades (including new economic sectors) in the Discount Council was openly discussed, which would indicate that, like in other institutions, expertise and representative character were becoming more and more significant for the choice of members.
- ^{xxiv} Unfortunately, I do not have comparative data about 1848-1870. But it must be said that the work in the Chamber was then organized in a new way, most of the reports being prepared by standing specialized committees. This in turn points in the direction of more technical specialization and less general discussion.
- ^{xxv} On exporters and UNCI, see Lemerrier, 2004; on economic specialization among elites, Plessis, 1982 and 1985 are particularly interesting.
- ^{xxvi} The Commercial Court was in fact the first institution to enter the way of expertise and representative character and to create ties with the *chambres syndicales*. The judges transferred a majority of cases to experts or arbitrators and often followed their decision. Among these experts or arbitrators, we find many *chambres syndicales* leaders who were chosen because they knew their particular trade very well. Some of them were praised enough to be chosen as judges afterwards. It is interesting to notice that many of the first isolates (in terms of the network examined here) who entered the Chamber of Commerce came from the Commercial Court.
- ^{xxvii} About network analysis and history, a good and simple introduction is Erickson (1997); I submitted a review paper (in French) to *Revue d'histoire moderne et contemporaine* in May 2004. The webpage <http://www.sfu.ca/~insna/> provides useful information and free software including the programs used here (Borgatti et al., 1999; Borgatti, 2002).