

Networks and Failure in Early Capitalist Business

by

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A report of 5 February 1540 records a fire that broke out in the chancery of Hans II Paumgartner on 7 November 1539. What follows is a rare peak in the office of a great, early modern enterprise:

He found burned or burning many letters, debts, receipts, registers, inventories, contracts and memoirs, on paper and vellum, sealed and unsealed, which he was accustomed to leave scattered on his desk, benches and seats, this time more than usual lying about in order better to organize his affairs, and called, “Water! Water!”¹

Tremendous amounts of material were lost to damage by fire and water. As Paumgartner put it through his spokesman, Ulrich Pfatt: “The fire caused him such damage, loss or destruction that it could yield him real disadvantage one way or another in the future.”

As he makes clear, the inability to prove obligations of one sort or another would cause him grave disadvantage. Official testimony from various servants and relatives had

¹ “Er hett etlich vill missiven, schuldtbrief, quittungen, register, verzeichnussen, urkhunden und memorial von pappir und pergimen, besigelt und unbesigelt, so er seiner gewonheit nachauf dem schreibtisch, dem simbsen und pencklin um solchen tisch gelegen oder stoßendt sunderlich von wegen etlicher ordnungen in seinen sachen zu machen, dysmalen mer dann andern zeiten ligen lassen, verprunnen und prinnendt gefunden und geruffen wasser! wasser!” Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 63, 40-1.

to be taken in an attempt to reconstruct the documents. It seems likely nonetheless that cooperative agreements had to be renegotiated and that some debtors and creditors may have escaped payment.

Nor were they the only ones effected. Historians have been likewise forced to reconstruct Paumgartner's business associations, not from the collective registers of account books, but from the individual names involved in single exchanges that chance to survive in dispersed archives and editions. This research has yielded fragmentary albeit interesting results.² Hans II maintained a broad range of business relationships, as befits one of Europe's ablest and wealthiest merchant-financiers. He loaned over 20,000 fl to no less than 15 individuals, owed over 40,000 fl³ to 32 others and entered into a variety of cooperative business deals and services with 41 colleagues. These transactions and arrangements extended across the German-speaking world and involved merchants and aristocrats alike; research has yet to unlock the extent or value of his dealings in Iberia, Italy, France and the Netherlands, to say nothing of the wider world. Incomplete as these rough figures are, they suggest a well-established business, offering commercial, manufacturing and financial services to other companies and select clients.

The Paumgartners were, indeed, well-established and well-known in European business circles. The more distant history of the family remains vague. They are widely believed to originate among the minor nobility of Lower Franconia, whether of aristocratic or ministerial background is not clear. By the end of the fifteenth century, they were successful merchants in Nuremberg, when bankruptcy forced them to shift

² Wolfgang Reinhard, ed., *Augsburger Eliten des 16. Jahrhundert: Prosopographie wirtschaftlicher und politischer Führungsgruppen, 1500-1620* (Berlin 1996), 24-7

³ The debt of 40,000 fl excludes over 100,000 fl owed to his father, Hans I, and to his son, Hans Georg. This sum probably reflects testamentary arrangements to transfer capital between generations.

operations to Augsburg. The patriarch of what would become the Augsburg line, Hans I, born in 1455 in Nuremberg, signaled the family's quick recovery and confirmed their status as wealthy and honorable merchants, all business failures notwithstanding, by marrying Felicitas Rehlinger, the daughter of one of Augsburg's oldest and most prestigious, patrician families, in 1485.

Hans I founded a family firm that engaged in textile and spice trading but quickly began to concentrate its interests in mining and finance, especially in Habsburg territories. He partnered with the Fugger, Gossembrot and Herwart in 1498 to establish the first copper syndicate in Tyrol. With the Welser, he underwrote a voyage to India in 1505 to trade in pepper.

Under the leadership of his son, Hans II, the Paumgartner reached the pinnacle of success. Like his father, he married well, taking Regina Fugger as wife. Before assuming sole leadership of the family firm, he had already assembled a broad commercial experience, undertaking business ventures in England and France as well as Portugal. His attention concentrated more and more on mining and metallurgy in Tyrol, where he became one of the most important mine operator (*Gewerke*) in the region. As this industry was intimately connected to state finance, he also served as one of the most important lenders to the Habsburg dynasty. His money helped to pay for the wars of Charles V and Ferdinand I. Nor did he permit political boundaries to define business opportunities; he also provided funds to Habsburg competitors, including the Valois king of France, Francis I.

Financial potency opened the door to wider political engagement. Hans II soon became a trusted counselor of Charles V. If any principle defined his policies, whether

financial or political, it would be a firm commitment to the Catholic religion and cause. With the emergence of Reformation in Europe, and especially in his hometown, he applied all his influence to its defeat. He abandoned Augsburg, when it committed to a reformed confession and liturgy after 1537. During the Schmalkaldic Wars he tirelessly pursued the defeat of the Protestant alliance and the subjugation of the upper German Imperial cities. Specifically, he advocated the introduction of a patrician government in Augsburg and, once that was accomplished in 1548, was elected to its Secret Council (*Geheimer Rat*).

Commercial success and political power made Hans II one of the richest men in the Empire and in Europe. His lifestyle reflected his wealth. Over the course of his career, he accumulated rural estates, the most substantial of which, Hohenschwangau, he crowned with a representative palace in the Italianate style. In 1537, he was elevated into the *Freiherrnstand*, an aristocratic status that would mean more to his sons than their father's commercial roots. Hans II proved a great patron of the arts and letters, supporting the work of such renowned humanists as Willibald Pirckheimer, Ulrich Zasius and Erasmus of Rotterdam. He also created a *fidei commissus* that prevented alienation of the family's landed estates.⁴ All such properties could be inherited only in the male line of the family; female descendants would have to accept monetary legacies that would serve as their dowries. It offers further testimony to his aristocratic ambitions.

The sons of Hans II, Hans Georg and David, were less interested in business than their forefathers. They married into the landed nobility and began to alienate family commercial interests before their father's death. The transfer of mining properties to the Herwarts in 1548, before their father's death, was a single step in this process of

⁴ Bayrisches Hauptstaatsarchiv München, Repertorium 3360, fol. 34-41.

divestiture that initiated a decline in fortunes that ended in the death of David and the bankruptcy of Hans Georg. With their deaths, the male line of the Augsburg family was extinguished.

The same crude review of their financial and business relations offers a revealing comparison with that of their father and suggests the evolution of the family's fortunes. The sons lacked their father's commitment to business, to be sure, but they also lacked his sense of management. David loaned money roughly 167,000 fl to two people, including 164,000 fl to the notorious Protestant, Jakob Herbrot. Herbrot's default prevented David from satisfying his 43 creditors, to whom he owed more than 675,000 fl. The imbalance suggests a failure to diversify, a dependency on credit and a lack of income.⁵ He was depositor or partner to no one. Hans Georg remained somewhat more engaged in business but demonstrates the same tendency to borrow rather than lend.⁶ He loaned a total of over 20,000 fl on six occasions but borrowed more than 89,000 fl in 49 transactions. He received a single deposit of 1,000 fl and joined in cooperative ventures with 35 colleagues and their companies. While these figures indicate crude totals of credit and debt over a lifetime, rather than amounts loaned or owed at any one point in time, they show an unmistakable tendency toward illiquidity.

Divestiture and failure are doubly fascinating in this case because of their non-economic context. Without any apparent economic compulsion, the Paumgartners yielded their most profitable enterprise to the Herwarts, a family that was their competitor in commerce. The profligate sons abandoned commerce for lives as rentiers, in which they lived well beyond their means. Such doubly irrational, if not inexplicable, behavior

⁵ Reinhard, *Augsburger Eliten*, 20-1.

⁶ Reinhard, *Augsburger Eliten*, 28-30.

serves as a reminder that economic actions are always embedded in networks of social relationships. It also signals the fact that these networks are neither fixed nor stable. This chapter attempts to explore the effects of social networks on economic relations. Failure, as will become clear, is seldom solely economical.

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Simply put, a network is a structure or form that connects interacting entities or groups of entities, be they molecules or machines, persons or organizations. Their study has arisen in the relatively recent past as a part of the general area of science known as complexity theory, which attempts to discover the laws that govern the organization and architecture of these forms.⁷ Networks appear, regardless of their constituent parts, to share a common organizational logic. That is to say, their structures appear to be the same, whether they are networks of computers in the World Wide Web, networks of cells in a nervous system, networks of creatures in an ecosystem, networks of people in a social system or networks of businesses in an economic system. When mapped in graphic form, they all look the same; when modeled in numerical form, they all grow the same.

Molecules and machines, cells and computers interact according to a mathematical logic. The same principles cannot be applied with the same force or validity to individual humans, their organizations and their networks. Aggregate behaviors and large-scale events seem to require nonetheless some explanation beyond idiosyncrasy, contingency or coincidence. Can the autonomy of the individual be

⁷ For an accessible, general introduction to the topic, see Mark Buchanan, *Nexus: Small Worlds and the Groundbreaking Theory of Networks* (New York, 2002).

rendered consistent with the applicability of natural or social law? Stanley Milgram's now famous study of "the small world problem" established a point of departure for network study.⁸ Can there be only "six degrees of separation" between any two of the more than six billion people on the planet? Do the independent behaviors of individuals predictably yield the same aggregate results? It is, in fact, a commonplace phenomenon that has been empirically demonstrated again and again but continues to defy explanation. To ask the question in more general terms, how do large populations connect and communicate efficiently? The mathematicians, Duncan Watts and Steven Strogatz, published research in 1998 that suggested small-world phenomena resulted from a specific organizational structure.⁹ The possibility of rapid passage of impulses, influences or ideas across any network of individuals, no matter how large, could be explained in terms of a unique architecture that they called the "small world network." To reach this conclusion, they built upon the insight of the sociologist, Mark Granovetter, that links in a network are not all equal.¹⁰ Some of the connections between persons are stronger than others. Paradoxically, the weaker or more casual ones contribute more substantially to communication and interaction precisely because they provide bridges or short-cuts between stronger ones. Hence, in any network with ties of more or less equal strength, a few, weaker ones are essential to achieve efficiency, the noted six degrees of separation. Yet, because networks do not possess ties of more or less equal strength, individuals tend to cluster into groups bound by stronger ties. Such clusters or cliques,

⁸ Stanley M. Milgram, "The Small-World Problem," *Psychology Today* 1 (1967): 60-67.

⁹ Duncan J. Watts and Steven H. Strogatz, "Collective Dynamics of 'Small World' Networks," *Nature* 393 (1998): 440-2.

¹⁰ Granovetter's early contributions to network theory have helped to establish him as one of the foremost students of economic sociology. For his work on weak ties, see Mark Granovetter, "The Strength of Weak Ties," *American Journal of Sociology* 778 (1973): 1360-80; *ibid*, "The Strength of Weak Ties: A Network Theory Revisited," *Sociological Theory* 1 (1983): 203-33.

which appear to develop randomly, mark the networks of human society, of course, but the networks of nervous systems and the World Wide Web as well. Studying the internet, the brothers Michael, Petros and Christos Faloutsos established that the relationship between the number of links in any network and the number of nodes in that network corresponded to what mathematicians call the power-law pattern.¹¹ As the number of links increases, the number of nodes possessing that many links decreases by a steady proportion. Hence, the larger a network, the greater the number of links connected to a smaller number of nodes. Hierarchies emerge. The rich get richer, so to speak.¹² Physicists Albert-László Barabási and Réka Albert formally established the mechanics of this process and, so, perfected the model of small-world networks.¹³ They all display random connections that allow movement from any one individual to any other in a very few steps. They all display a high degree of clustering around a few central hubs. And, they appear to develop randomly, without any obviously applied design or intention, thus constituting a fundamental architecture of systems in nature and society.

Complexity theory and network study have proven fruitful in a number of quite divergent fields, including physics, biology and economics, where they offer potential explanations for the operation of such diverse structures as computer systems, ecosystems and market economies. Networks have also achieved growing importance in the social sciences and history over the last two decades, where their organization and function is thought to explain in consistent fashion the course of human interaction, past, present and

¹¹ Michael Faloutsos, Petros Faloutsos and Christos Faloutsos, "On Power-Law Relationships of the Internet Topology," *Computer Communication Review* 29 (1999): 29.

¹² Buchanan, *Nexus*, 106-20.

¹³ Albert-László Barabási and Réka Albert, "Emergence of Scaling in Random Networks," *Science* 286 (2001): 509-12.

future.¹⁴ Everything from communication to consumption, from riots to rumors, from fashions to failures can, supposedly, be explained and even predicted with reference to social networks.

Such vaulting ambitions begin with a fairly modest observation. The term, “social network,” was coined by J. A. Barnes¹⁵ in his 1954 study of social organization and “face-to-face relationships” in the Norwegian coastal parish of Bremnes. As he put it, in examining the social field of friendship and acquaintance:

Each person is, as it were, in touch with a number of other people, some of whom are directly in touch with each other, and some of whom are not. Similarly each person has a number of friends, and these friends have their own friends; some of any one person’s friends know each other, others do not. I find it convenient to talk of a social field of this kind as a *network*.¹⁶

Thus envisioned, a social network is both simple and complex. It reduces social relations to a series of agents and the links that connect them. These permit, in turn, simple representation as a series of nodes and ties. The resulting structures can assume any size but, interestingly, take few shapes. Theorists distinguish broadly between two: so-called “egalitarian” networks and so-called “aristocratic” networks. The former, as the name suggests, has ties that are distributed more or less equally among the nodes. This type corresponds to the original vision of Watts and Strogatz. Aristocratic networks, by contrast, display spectacular disparities with most links running to and from a very few

¹⁴ [Need some exemplary citations here.]

¹⁵ Barnes’s usage predates Milgram’s ground-breaking experiment and any conjecture that networks might be the common architecture of the cosmos. See J. A. Barnes, “Class and Committees in a Norwegian Rural Parish,” *Human Relations* 7 (1954): 39-58.

¹⁶ Barnes, “Class and Committee,” 43.

nodes. These, of course, resemble the clustered networks of Barabási and Albert. In reality, small world networks display features of both while tending toward one or the other. As simple as such networks appear in form, their function evinces a high level of complexity. Images of networks, made up of nodes and ties, suggest that interactions are always dyadic, linking at any given point in time two and only two elements. Real networks involve multiplex relationships, however, each element being simultaneously connected to and interacting with multiple elements along multiple ties. As a result, egalitarian and aristocratic networks respond differently and not always predictably to the loss of nodes and links.¹⁷ This suggests questions of central importance to historical research generally and to this study specifically? How do social networks respond to the removal of an element, be that element a person, a family or a business? What role do such networks play in social or economic success and failure?

Another, related terminology elides structure and function and, so, takes a step toward answering these questions. “Open” networks, having more nodes and weaker ties and, tending thus toward the egalitarian form, are thought to be more receptive to new information, new relationships and new engagements. Looser ties permit greater initiative and increase risk on the part of individual members. “Closed” networks, having fewer nodes and stronger, often redundant ties, tend in the opposite direction. Networks, in which business associates, for example, are linked not only by their commercial or financial relationship but also by ties of blood, marriage, membership and confession,

¹⁷ Studies in the effects of cyber-terrorism and the spread of epidemic disease have established the role of network structures in hindering or facilitating these developments. See, for example, Réka Albert, Hawoong Jeong and Albert-László Barabási, “Error and Attack Tolerance of Complex Networks,” *Nature* 406 (2000): 378-81; Mitchell L. Cohen, “Changing Patterns of Infectious Disease,” *Nature* 406 (2000): 762-67; Hawoong Jeong, Sean Mason, Albert-László Barabási and Zoltan Oltvai, “Lethality and Centrality in Protein Networks,” *Nature* 411 (2001): 41-42.

may enforce shared standards and expectations, thus reducing freedom and risk, all of which would suggest that “open” networks would be more resilient to failure or loss.

Yet, at this point, where form predicts function, the study of networks with its reliance upon mathematical logic and physical law runs afoul of social interactions that result ultimately from individual human initiative and autonomous choice. One difficulty concerns the tension between an order based on natural law and an order based on contingent actions. In physics and chemistry, for example, weaker ties between elements or bodies are more readily subject to actions of external forces, breaking or altering the networks of which they are part. Even when those external forces are randomly introduced, their actions are subject to the order imposed by natural, physical laws. In social relations, by contrast, even the weakest relationships may resist rupture or alteration—and even the strongest ties may fall victim—on the basis of quite simple, arbitrary human choices or actions that cannot always be explained rationally. Social agents possess a degree of freedom, I would argue, giving their actions a contingent quality, unlike particulate matter that reacts mechanically to the compulsion of physical forces. That freedom may be constrained or influenced by social relations—by the social network—but it is never entirely negated. That sons worked for their fathers or that wives invested their dowries in their husbands’ firms, for example, as was common practice in early modern Europe, suggests one such constraint. These and similar facts did not prevent family members from acting opportunistically, however, pursuing their own interests against those of their relatives. Social network theory accounts neither for the nature of the connections between elements nor for the behaviors that result from them. Another difficulty arises from the degree to which networks are static or dynamic.

While networks in the natural, physical and social worlds all change over time, their study renders them static, freezes them at a given point in time. Diagrammatic representations suffer this limitation particularly. Yet, in reality, networks are constantly changing, not only growing in size but varying in their constituent elements and the intensity of their connecting links. Whereas this may apply less to ecosystems or nervous systems, it applies with great force to computer systems like the World Wide Web, where hyperlinks come and go, wax and wane, on an almost hourly basis. And it applies with even greater force to social networks, where human relations warm or cool, start and stop, for reasons specific to the persons involved. Networks are not agents of change, but rather forms for agency. Nor are they a necessary form. Whereas tangible goods—commodities or persons—must move along established pathways from one point to another, intangible goods—ideas and influences—need not. Consider, by way of example, the flow of information. A merchant, pacing the arcade of the Amsterdam bourse, might overhear snippets of conversation or notice the expression or posture of another merchant and, so, deduce market information without any social relationship. Human relations are dynamic, multivalent and elusive, a fact that network theory cannot integrate. A final difficulty, in my opinion, has to do with the nature of the dynamism—the capacity to change over time—that networks exhibit. Network theorists insist with right that networks can grow and change over time and that this quality renders them “historical.” Yet, the study of change in the so-called “historical sciences,”¹⁸ such as biology or geology, where random events alter the course of natural evolution or terraformation, the process of change remains subject to the order imposed by scientific law. Human history is governed by a contingency that derives from the ability of each

¹⁸ Buchanan, *Nexus*, 90.

human being to act randomly, arbitrarily and spontaneously. They can and do regularly violate the laws thought to govern social action and interaction. Human beings, finally, are not molecules in chemical compound, nodes in a computer model or vectors of inhuman forces. As Buchanan avers, “Each of these networks is the product of a wholly unique history.”¹⁹ That history, however, differs decisively from human history.

The difficulties and discontents of network study notwithstanding, attention to their role in economic life remains unavoidable and essential. People form networks, whatever their shape and however elusive or dynamic their connections, and those networks help to articulate economic activities. Economic life is “embedded” in social relations. Although Richard Swedburg and Mark Granovetter, among others, have argued the notion elegantly and compellingly over the last 25 years²⁰, and although a host of empirical studies of a variety of socio-economic issues have substantiated it, it is by no means new.

The argument from “embeddedness,” a term first coined by Karl Polanyi to describe the inseparability of economic from political and religious life in a pre-capitalistic age²¹, is philosophically rooted in the German Historical School of economic thought and method. At the close of the nineteenth century, its representatives opposed the classical economic model, according to which isolated individuals acted solely according to selfish and unchanging economic motives, divorced from religion, ethics

¹⁹ Buchanan, *Nexus*, 91.

²⁰ Mark Granovetter and Richard Swedburg, eds., *The Sociology of Economic Life*, 2nd ed. (Boulder, CO 2001); Neil Smelser and Richard Swedburg, eds., *The Handbook of Economic Sociology* (New York, 1994); Richard Swedburg, “Economic Sociology: Past and Present,” *Current Sociology* 35 (1987): 1-22; idem., Major Traditions in Economic Sociology,” *Annual Review of Sociology* 17 (1991): 251-76; idem., “New Economic Sociology: What has been Accomplished? What is Ahead?” *Acta Sociologica* 40 (1997): 161-82. See also Arthur Stinchcombe, *Economic Sociology* (New York, 1983); Harrison White, “Where do Markets Come From,” *American Journal of Sociology* 87 (1981): 517-47; idem., *Identity and Control: A Structural Theory of Action* (Princeton, 1992).

²¹ Karl Polanyi, *The Great Transformation* (Boston, 1944) [find exact quotation!].

and politics. They viewed this as too simplistic, the basis for timeless—and therefore, invalid—generalizations and laws. The goal of economic activities was not the utility of isolated individuals, but rather the welfare of the entire collective, in this case the nation (*das Volk*). Hence, the proper study of the economic aspects of human life could not be the analysis of timeless and universal mechanisms involving the self-seeking individual. It had to focus on the given situation in terms of the economic activities and institutions as well as the cultural values, social structures and political realities of a specific nation throughout its history.

Embeddedness belongs as well to the bed-rock assumptions of classical sociology. Max Weber defined “economically oriented” action as a subset of social action—action oriented to other people—that is “concerned with the satisfaction of a desire for ‘utilities’.”²² Likewise, Emile Durkheim conceived of economic action within a framework of longer-term social interactions and structures: “The members [of any society] are linked by ties that extend well beyond the very brief moment when the act of exchange is being accomplished.”²³ In other words, “Economic action...is ‘embedded’ in on-going networks of personal relationships rather than being [sic] carried out by atomized actors.”²⁴ The realization that economic actions are social actions, that the economic and the social can only be separated arbitrarily, has immediate consequences for the more recent literature on economic institutions. Economists, such as Oliver Williamson and Douglass North have argued that economic institutions must be “efficient.” To become established as durable institutions, they must be capable of

²² Max Weber, *Economy and Society: An Outline of Interpretive Sociology* (Berkeley, 1978), 4, 63.

²³ Emile Durkheim, *The Division of Labor in Society* (New York, 1984), 173.

²⁴ By “networks” the authors mean “regular sets of contacts or social connections among individuals or groups.” Granovetter and Swedburg, eds., *The Sociology of Economic Life*, 11.

“economizing on transaction costs.”²⁵ It is “the key to growth; the development of an efficient economic organization in Western Europe accounts for the rise of the West.”²⁶ Certain economic historians have seized upon efficient institutions to explain both the existence of particular economic practices and organizations in the past and their role in determining economic development into the present.²⁷ Others have objected, however, that institutions may persist regardless of efficiency, precisely because of their social embeddedness.²⁸ The theory that institutions embody efficient solutions to market failures advances a kind of functionalism regardless of all historical or empirical proof to the contrary.²⁹ It denies the workings of path-dependence, for example, which demonstrates that efficient solutions do not always emerge or persist.³⁰ Whatever else they may be, economic institutions, among which social networks should be counted, must be approached as social constructions.

Doing so, may reveal a more complex reality than the network theorists themselves admit. Networks of social relations have no agency. Rather, they are the forms or structures, the architecture, through which agency is articulated. They are the result of deliberate, purposeful interactions on the part of individuals or groups that suggest—but do not necessarily reveal—the motives and values of those agents. While

²⁵ Oliver Williamson, *The Economic Institutions of Capitalism* (New York, 1985), 17.

²⁶ Efficiency is understood in terms of “the establishment of institutional arrangements and property rights that create an incentive to channel individual economic effort into activities that bring the private rate of return close to the social rate of return.” Douglass C. North and Robert Paul Thomas, *The Rise of the Western World: A New Economic History* (Cambridge UK, 1973), 1.

²⁷ See, among many others, Avner Greif, *Institutions and the Path to the Modern Economy* (Cambridge UK, 2006); Francesca Trivellato, *The Familiarity of Strangers: The Sephardic Diaspora, Livorno, and Cross-Cultural Trade in the Early Modern Period* (New Haven, 2009).

²⁸ See Sheilagh Ogilvie, *Institutions and European Trade: Merchant Guilds, 1000-1800* (Cambridge UK, 2011).

²⁹ Granovetter and Swedburg, eds. *The Sociology of Economic Life*, 15.

³⁰ W. Brian Arthur, *Increasing Returns and Path Dependence in the Economy* (Ann Arbor, 1994); Paul A. David, “Understanding the Economics of QWERTY: The Necessity of History” in William N. Parker, ed., *Economic History and the Modern Economist* (Oxford, 1986), 30-49

not unconstrained, those agents retain the essential autonomy to alter those interactions, changing or destroying networks, even in apparent violation of social or cultural norms. Accordingly, social networks may influence but do not determine social interactions and exchanges, including economic life.

Early modern merchants constructed their businesses at least in part through ties of social relationship; it is the essence of an intimate economy. In the case of bankrupts, we can usually identify spouses and children, partners and competitors, employees and clients, creditors and debtors. Case documentation indicates not only the nature but also the intensity of those relationships: how much intimacy, value or frequency. That people prefer to enter social or economic relations with those somehow familiar to them—whether through personal knowledge, common reputation or due diligence matters less for the moment—suggests nothing more than an inclination to avoid the unknown. The conclusion is tautological and uninteresting; it reveals little about economic behavior. Certainly, personal knowledge and social relationship can serve the purposes of risk distribution and management. It did so in the early modern, even as it does so in the modern. Then as now, however, it was not the sole means at hand.

How does one reconstruct a social network, especially one that existed nearly 500 years ago? In the case of bankrupts, the legal proceedings provide a useful first step. It is possible, as noted, to comb these records for the names of spouses and children, partners and competitors, employees and clients, creditors and debtors, all those person involved in or effected by the failure because of their given relationship to the bankrupt. This sample provides a core to which further relationships connect. From the names of family members—parents, spouses, siblings and children—marriage alliances and in-law

relationships can be identified. From the names of business associates—partners, employees, clients and contacts—entrepreneurial ventures and economic activities can be captured. From the names in financial dealings—creditors and debtors—capital exchanges and capitalistic connections can be traced. Bankruptcy proceedings lead thus to marriage, business and financial records, a host of legal, administrative and personal sources and the economic and social relationships they expose. They indicate not only the identity but also the quality of these relationships. And this is only the beginning. Names can be compared to identify common participation in congregations, associations, councils or neighborhoods. Names can be filtered to identify repetitions: Sons who are also partners; sisters-in-law who are also creditors; colleagues who are also competitors, associates who are also opponents. Names can be collated to identify patterns of connection that extend beyond the personal to the familial and generational. The possible extensions and manipulations are limited only by the researcher's imagination. The reductionist nomenclature of closed or open, strong or weak, multiplex or simplex, relationships fails absolutely to capture their intensity, complexity or mutability over time.

Working backward from the bankruptcy records, extending the contents wherever practical by reference to marriage records, business accounts, legal documents and nominal lists, I have created tables of relationship for each of the bankrupts and, because early modern businesses usually involved family members over generations, their fathers. The contents include the names of family members and in-laws, business associates and clients, as well as the nature, place, date and value of these relationships wherever possible. I have tried to attend to those names that appear repeatedly, indicating a more

frequent connection. I have also tried to examine those names that appear only once but appear nonetheless significant by nature of their role or worth. I have tried, finally, to show how these networks evolve over time, as one generation after another took control of and transformed the family business. The result has been a series of charts that can expand to hundreds upon hundreds of individuals and the connections between them.

Yet, for all their size and extent, those tables remain incomplete. Bankruptcy exposed insider knowledge, proprietary information that no merchant-financier willingly revealed. Much remains lost or hidden. Nor are business relations the only ones that elude the historian. Whereas marriage connections are usually well-documented, other kinds of relationships, for example, godparentage or witnessing, which may be no less important for cementing social relationships and networks, are often less well so. Hence, historical networks can only be viewed as partial reconstructions at best. Who could claim to know every relationship over the lifespan or career of any person, living or dead? Who could record such a network completely? And, without that level of knowledge, what good is the reconstruction of any network?

This chapter makes no claim to global coverage. It seeks only to expose and examine the readily identifiable and more important familial, social and economic relationships of the bankrupts—those that result from marriage and those that result from business—in order to answer a few, deceptively simple questions. How did social networks shape the economic actions of early modern merchant-financiers? How did these networks figure in their failures?

* * *

The credit and debt relationships of the Paumgartner, considered above in the crudest possible terms, reveal changes over time and suggest implications for business. In its third generation, in the hands of Hans Georg and David, the family firm moved decisively away from active enterprises and productive investment toward consumption and display. Their father, Hans II led family and firm to the height of their prosperity, but he also prepared the way out of business by the purchase of landed estates and the accumulation of aristocratic titles. The process began in the previous generation, however, with Hans I, who fled bankruptcy in Nuremberg, settled his family in Augsburg and rebuilt its social and economic fortunes.

Unfortunately, less is known about Hans I. The son of Anton Paumgartner and Klara Arzt, a daughter of the Nuremberg branch of the Augsburg patrician family, he appears in the historical record of Augsburg the year he married Felicitas Rehlinger, in 1485, at age 30. The Rehlingers belonged to the pinnacle of Augsburg society as members of the city's elite *Patrizier*. Anna's father, Leonhard, cannot be situated within the ranks of this powerful clan, however. Given that the Paumgartners were newcomers to Augsburg society, burdened as well with the taint of failure, Hans I may have settled for the daughter of a cadet branch. Together, they had seven children who married into established families of Augsburg's association of long-distance wholesalers, the *Kaufleutezunft*: Anna married Simon Imhof in 1507; Sabina married Wolfgang Rudolf in 1512, Felicitas married Anton II Welser in 1513; Regina married Markus II Ehem in 1517; Monika married Leonhard Imhof in 1520; Helena married Konrad I Rot in 1527.³¹

³¹ Reinhard, ed., *Augsburger Eliten*, 22-4.

And, of course, Hans II married Regina Fugger, the daughter of Raymond, sister of Anton and niece of Jakob II (the Rich) Fugger.

These alliances would certainly seem to cement the position of the *arriviste* Paumgartners within the ranks of Augsburg's wealthy, international merchant community. It is interesting, therefore, to note how seldom members of these families appear among the business connections of Hans I.

Although two of his children married members of the Imhof family, Hans I had no apparent business contact with them. Likewise, the Ehems and Rots, both substantial mercantile families that along with the Imhofs would be elevated into the ranks of the patriciate in 1538, do not appear in the surviving records of his activities. These were successful alliances in terms of up-ward social mobility, but none of them had any obvious impact on Paumgartner commercial activities. Wolfgang Rudolf, too, was no business associate of Hans I. He appears, however, as a witness to Paumgartner family contracts in the next generation, especially the testaments by which Hans II, his brother-in-law, passed the family business to his sons. He also, interestingly, received a gift of 4,000 French Crowns from Hans Kleberger, a merchant of Nuremberg and associate of Hans I, that would become the basis of a complex transaction.³² Originally, this sum was to be deposited with Hans I, who would pay an annuity of 200 Crowns to Kleberger and transfer the principle of Rudolf after Kleberger's death. In 1538, Rudolf transferred the principle to Hans I in exchange for an annuity of 300 fl that would be paid to him, like the Kleberger's annuity, until the giver's death. These functions and agreements suggest a level of intimacy and intensity of engagement on the part of Rudolf in Paumgartner

³² Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 585, 237,

affairs that, in the final analysis, cannot be quantified in simple numbers of network connections.

By contrast, only two families, the Fugger and the Welser, entered into multiplex relationships with Hans I. With Anton I Welser, the father of his son-in-law, he maintained business contact in 1508 and partnered in at least one purchase of grain in 1509.³³ With his brother-in-law Anton Fugger, his connection was somewhat more intense; he loaned Fugger 6,643 fl in 1525, borrowed 400 fl in 1527, deposited 2,000 fl in the “Gemeine Fugger’sche Handlung” that same year and participated in an exchange worth 413 fl.³⁴ Hans I also had business relations with Anton’s uncles. Jakob II Fugger and he owned a mine in Tyrol between 1524 and 1526.³⁵ Ulrich I Fugger and he joined a financial consortium that included Hans’s brother, Franz, Sigmund II Gossembrot and Georg I Herwart to lend 60,000 fl to Maximilian I in 1496.³⁶ They also participated, once again with Georg I Herwart and Sigmund II Gossembrot, as well as Hans Knoll of Salzburg, in a syndicate, contracted in 1496, that controlled the sale of Tyrolean copper in Venice.³⁷

Apart from the multiplex relationships that overlaid marriage and commerce, the rest of the business relationships established by Hans I appear to have been simple, one-time connections. There were some exceptions: Georg Besserer was both partner and

³³ Müller refers to neither transaction in the *Quellen zur Handelsgeschichte der Paumgartner*. See Roßmann, *Bruckstücke*, 50, 54; Müller, *Welthandelsbräuche*, 52.

³⁴ Strieder, *Inventur*, 61, 66, 68, 78;

³⁵ Müller records no contract of ownership in his *Quellen zur Handelsgeschichte der Paumgartner*. References to the co-ownership appear nonetheless in Hagl, *Entwicklung*, 20; Strieder, *Inventur*, 42.

³⁶ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 239, 119-20. See also Krag, *Paumgartner*, 35; Riebartsch, *Augsburger Handelsgesellschaften*, 82, 87; Kellenbenz, *Fugger in Spanien und Portugal*, I: 494; *ibid.*, *Wirtschaftsleben*, 285.

³⁷ Reinhard dates the syndicate 1498, at which point the syndicate becomes a cartel, but Müller reproduces the contract, dated 22 August 1496. See his *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 488, 199-200. See also Strieder, *Inventur*, 40; Pölnitz, *Jakob Fugger*, I: 98-100; Riebartsch, *Augsburger Handelsgesellschaften*, 50, 72, 126; Kellenbenz, *Fugger in Spanien und Portugal*, I: 484, 495; *ibid.*, *Wirtschaftsleben*, 283; Kießling, “Wirtschaftsbeziehungen”: 195.

debtor for a sum of 6,000 fl³⁸; Lukas I Gassner was both a long-term partner and co-owner of a mine with Hans I³⁹; Hans Kleeberger, merchant of Nuremberg, was a regular correspondent of Hans I, who also invested 8,500 fl “in Handlung” with him.⁴⁰ But, the majority had relationships neither to the Paumgartner family and its marriage partners nor to their regular business connections. Against the single surviving record of debt, 400 fl owed by Hans I to Anton Fugger, 27 records of credit survive, individuals who owed varying sums to Hans I. None had apparent familial or marital connection to the Paumgartners. Of those 27 debtors, 11 could be identified as to place or origin or residence: nine from Augsburg or Swabia, one from Nuremberg, one from Venice. Among the debtors were one woman, two priests and four noblemen. The rest, presumably, were merchants who borrowed for commercial or entrepreneurial purposes, but several modest sums—10 fl owed by Hans Geyr, 40 fl owed by Martin Paumann, 20 fl owed by Andreas Rumelli, 50 fl owed by Bernard Reyser and 20 fl owed by Ulrich Jaeger—probably represent credit extended to artisanal masters.⁴¹

The surviving documents of Hans I offer few signs of the influence of social networks in economic life. Looking beyond marriage and business to those activities that might be taken to signify less tangible but no less important patron-client relations, such as witnessing contracts, executing wills or standing godparent, the same pattern emerges. Hans I witnessed and sealed the marriage contracts of his granddaughters, Apollonia and Regina von Stetten, the daughters of his daughter, Monika, and her husband Leonhard Imhof. By contrast, he turned to several members of his wife’s family, the Rehlingers, to

³⁸ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 563, 229-30..

³⁹ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 130, 71-2; Nrs. 266-67, 129-30; Nr. 278, 132-3; Nrs. 228-9, 136-6; Nr. 292, 139; Nr. 300, 141-2; Nr. 503, 209; Nr. 528, 216; Nr. 558, 227-8.

⁴⁰ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 12, 9; Nr. 26, 22-3; Nr. 42, 26-8.

⁴¹ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 51, 32.

serve as witnesses or executors (*Testamentarier*) of his will: Bernhard II in 1517, Hans I in 1520 and Ulrich II in 1521.⁴² He also asked two members of his mother's family, the Arzt, Anton and Ulrich III, also appear as witness or executor to family documents.⁴³ The only record of a business transaction with the Arzt involves a loan of 500 fl in 1522 to Bernhard Arzt, Prior of the Franciscan establishment in Herrieden, north of Augsburg.⁴⁴ Hans I made some use of this maternal connection, however: he lived until 1492 in the neighborhood of Augsburg officially known as "Zum Ulrich Artzt."⁴⁵ The evidence remains equivocal. There seems to have been very little overlap between the social relationships of Hans I Paumgartner and his business activities. Nor do the nature of the surviving records indicate how social relations might have influenced economic activities.

His son provides both more evidence and more complicated connections. Hans II married Regina Fugger in 1512, as noted, binding his family to one of their most important colleagues and competitors. He became thus the son-in-law of Georg I Fugger and Regina Imhof (yet another connection to the Imhof family) and a brother-in-law to Anton and Raymond Fugger, the first of whom headed the vast Fugger enterprises from 1525 until 1560, in which the second of whom was a partner until 1535. Hans II was also a brother-in-law to those scions of rising mercantile families who had married his siblings: Simon Imhof, Wolfgang Rudolf, Anton II Welser, Markus II Ehem Leonard Imhof, Konrad I Rot. Yet, his own marriage strategy would diverge radically from his father's. He and Regina had seven offspring, six of whom married, all but one into the

⁴² Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 6, 6; Nr. 17, 12; Nr. 35, 22.

⁴³ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 6, 6; Nr. 15, 11.

⁴⁴ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 7*-8*.

⁴⁵ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 2, 4.

landed nobility: Susanna Baumgartner remained single; Regina married Christoph von Knöringen⁴⁶ in 1532; Hans III married Anna von Stadion⁴⁷ in 1537; Anton Baumgartner married Regina Honold, the daughter of Peter II Honold a *Mehrer der Gesellschaft*, in 1540; David married Ursula von Freyberg⁴⁸ in 1546; Marina married Heinrich von Fels in 1551 and Hans Georg married Anna von Kainach-Leonrod⁴⁹ in 1554.⁵⁰ If these alliances bespeak an explicit strategy, then it seems to have been one of upward mobility. In 1538, the Paumgartners, along with most of their peers, rose into the ranks of the Augsburg patriciate. Whereas Hans I seems to have intended a firm foundation for his family, Hans II tried to build upon it, strengthening through marriage his family's claim to noble status as well as its support for the Catholic cause.

Accordingly, business preferment may have been less important to him. Like his father, Hans II seems not to have conducted a great deal of business through his carefully constructed network of marital alliances. With but two exceptions, his sons- and daughters-in-law and their families appear nowhere among the records of his commercial or financial dealings. In 1524, Friedrich von Freyberg zu Kiblegg borrowed 200 fl from Hans II. Seven years later, in 1531, another member of the von Freyberg family, Ludwig, joined Hans II in the purchase of mines shares at a value of 1,369 fl. Business, it would seem, was not the purpose to be served by his children's marriages.

⁴⁶ These members of the Swabian *Reichsritterschaft*, can be traced to a twelfth-century ministerial family. Long-time servants of the Bishops of Augsburg and the Abbots of Ellwangen, they contributed two bishops two Augsburg in the sixteenth century: Johann Eglof (1573-5) and Heinrich V (1599-1646).

⁴⁷ Another ancient family of Swabian knights, the best known member was doubtless Christoph von Stadion, Bishop of Augsburg from 1517 to 1543, who was Anna's uncle.

⁴⁸ The von Freyberg were an ancient and extensive Swabian clan that can claim a Bishop of Constance, two Priors of Ellwangen, a captain of the Swabian League and a *Landvogt* of Augsburg.

⁴⁹ The von Kainach-Leonrod appear in no biographical dictionary, but the von Leonrod belonged to the Franconian imperial knights with close ties to the Cathedral Chapters in Eichstätt and Augsburg.

⁵⁰ Reinhard, *Augsburger Eliten*, 24-7

If it was the purpose of those marriages arranged by Hans I, then Hans II largely ignored those connections. This may have had something to do with strained relations that resulted from the disputed testament of Felizitas Rehlinger in 1534, for which Hans II served as executor. His sisters' husbands, Simon and Leonhard Imhof, Anton II Welser, Markus II Ehem and Konrad I Rot contested the inventory and payment of a legacy worth more than 40,000 fl.⁵¹ Be that as it may, Hans I engaged in few commercial or financial ventures with his own brothers-in-law. He appears to have had less complicated relations with Wolfgang Rudolf, with whom he partnered in business from 1517 until 1521. As noted, their relationship could have been intimate, given the frequency with which Rudolf appears as witness to Paumgartner family affairs. Beyond these two, the references remain sparse. In 1522, he joined Georg Imhof and Hans II Manlich in a financial consortium that provided credit to the Spanish crown.⁵² In 1534, he loaned 3,100 fl to Anton II Welser. With the Ehem and Rot he maintained no business ties. With his wife's brother, Anton Fugger, on the other hand, he worked closely.⁵³ Together, they engaged in multiple transactions and ventures: multiple purchases of Tyrolean silver and associated credit transactions, 1527-35⁵⁴; with Philipp Adler and Franz I Wagner a financial consortium to the Austrian Habsburgs, 1528⁵⁵; with Kaspar Wintzl of Nuremberg an exchange of 3,000 fl, 1539⁵⁶; with Anton I Haug and Sebastian

⁵¹Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nrs. 44-51, 28-34.

⁵² I have been unable to identify Georg Imhof. Though supposedly a member of the same extended family as the brothers-in-law, Simon and Leonhard Imhof, he was not a close relative. See Reinhard, *Augsburger Eliten*, 25; Kellenbenz, *Fugger in Spanien und Portugal*, I: 153.

⁵³ Record exists of financial services to the Spanish crown in 1522, extended in partnership with Jakob II Fugger and Christoph Herwart. See Kellenbenz, *Fugger in Spanien und Portugal*, I: 153.

⁵⁴ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 26*-33*, Nr. 395, 173-7, Nr. 399, 174-5, Nr. 400, 175, Nr. 411, 178, etc.; Pölnitz, *Anton Fugger*, I: 508 fn. 2; 527 fn.121; 560, fn 52; 566, fn 69; 430, fn 25; 631, fn 8; 670, fn 51.

⁵⁵ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 30*-33*.

⁵⁶ Pölnitz, *Anton Fugger*, II: 426 fn. 3.

Neidhart a financial consortium that loaned 140,000 fl to the Austrian Habsburgs, 1540-1549⁵⁷; with Matheus II Manlich a purchase of Tyrolean silver, 1542.⁵⁸ Despite this long record of cooperation, Hans II Paumgartner and Anton Fugger were and remained bitter rivals, each contending for control of the Tyrolean mining industry and Austrian financial services.⁵⁹ Embedded relationships could be highly ambivalent.

Records exist of exchanges with his mother's family, the Rehlingers. This patrician family was one of the common links of Augsburg elite society. Established and numerous, their members served as marriage partners for nearly all the great and wealthy families of the city, especially its merchant community. All of the bankrupts of Idria as well as their partners had marital ties of one sort or another to the Rehlingers. Hence, it comes as no surprise that Hans II maintained numerous business relations with them. From 1517-21, he partnered with Christopher I Rehlinger.⁶⁰ In 1524, he purchased shares of a mine worth 7,500 fl jointly with Bernhard III Rehlinger, to whom his estate owed 6,000 fl in 1550.⁶¹ In partnership with Konrad II and Hans I Rehlinger, he operated mercury mines in Idria in 1535.⁶² Records exist for debts of 3,000 and 4,000 owed to a Dr. Hans Rehlinger in 1537.⁶³ He owed Felizitas Rehlinger 64,317 fl in 1534, her share of her late husband's—his father's—estate, which was likely held as capital in his

⁵⁷ Stadtarchiv Augsburg, Kaufmannschaft und Handel, Nr. 5, fol. 96; Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 26*-29*, Nr. 450, 188-9, Nr. 458, 192-3, Nr. 463, 193, Nr. 469, 195, Nr. 482, 198; Pölnitz, *Anton Fugger*, II: 475 fn. 54; 538, fn 315; 539, fn 320.

⁵⁸ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 26*-29*, Nr. 456, 109-1.

⁵⁹ This judgment has become such a commonplace of scholarship that it can be found in every single historical work on the two brothers-in-law. They could call one another "Vetter" even as they sought to outdo one another. The historical truth of this paradox speaks to the inevitable limits of network research. Though networks give form to social and economic relations, guiding and shaping them, they cannot predict the full nature of those relations at any point in time or over time.

⁶⁰ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 61*.

⁶¹ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 42*, 58*.

⁶² Krag, *Paumgartner*, 62; Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 42*.

⁶³ Schöningh, *Rehlinger*, 16.

company.⁶⁴ To another member of the Rehlinger family, Christoph II he owed 4,200 fl in 1540.⁶⁵

Again like his father, Hans II maintained frequent, cooperative relationships with several Augsburg merchant-financiers, who were not otherwise connected to him or his family. The Haugs and Neidharts have been mentioned in connection with the cooperative ventures of Hans I with Anton Fugger. He also had regular contact with the Manlichs, who were no relation at all. Apart from the consortium he formed with Hans II Manlich to provide financial services to the Spanish crown, he joined Matthäus I and Hans Auslasser, to whom he owed 2,400 fl in 1545⁶⁶, to form a financial consortium to Maximilian I in 1516⁶⁷, and he later, in 1534, deposited 2,500 fl in the firm headed by Matthäus I and Markus II Ulstett.⁶⁸ The nephew of Matthäus I, Matthäus II, also conducted business with Hans I. Together with a member of the Stöckl family, *Gewerke* and merchants of Schwaz in Tyrol, they purchased consignments of copper and silver in 1540.⁶⁹ With Anton I Haug, they loaned Ferdinand I 60,000 fl in 1543.⁷⁰ And, in 1548, they signed a copper contract that obligated them to produce 39,000 *Zentner*⁷¹ of copper from the mines at Neusohl, in Hungary, which were notorious in the sixteenth century for labor unrest and Turkish insurgency.⁷² He and Hans Stöckl held shares in the same mines

⁶⁴ Strieder, *Genesis*, 32f. See also Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 50, 30.

⁶⁵ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 56*.

⁶⁶ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 56*.

⁶⁷ Krag, *Paumgartner*, 46.

⁶⁸ Strieder, *Genesis*, 32.

⁶⁹ Warnemünde, "Augsburger Handel," 21 fn. 5.

⁷⁰ Ehrenberg, *Das Zeitalter der Fugger*, I: 225.

⁷¹ A *Zentner* is a measure of weight equivalent today to 100 Pfund, each equal to 500 grams. A *Zentner* is thus held to be 50 kilogram. Before the standardization of measures, introduced by the *Zollverein* of 1858, a *Zentner* weighed a bit more, 56 kilogram.

⁷² The contract gave the Manlichs a monopoly in the sale of Neusohler copper throughout Austrian Habsburg lands and advanced the family's fortunes substantially. Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 52*.

from 1518 until 1535⁷³, and Stöckl owed him 2,000 fl in 1525.⁷⁴ With the Auslasser, like the Stöckl *Gewerke* and merchants of Schwaz, he similarly joined in a number of financial and mining ventures.⁷⁵ None of these families were blood or marital relations, but they were trusted business partners, to judge by their capacity to cooperate repeatedly.

In the second generation and at the pinnacle of its success, according to extant documents, the Paumgartner firm appears to have established a network that combined embedded relationships and more distant connections. Of 47 business ventures or transactions, 24 exchanges involved partners not otherwise captured in the Paumgartner network, that is, without apparent, social ties or relationships to them. Interestingly, of the 33 employees for whom some record exists, only one, Franz Auslasser of Hall, may have been the beneficiary of an embedded relationship.⁷⁶ All the others had no other connection to their employer. Twenty-three were burghers of Augsburg; the other 24 were neither citizens nor residents of the city, insofar as extant records make any determination possible. Three of his business ventures or transactions involved partners with noble titles, none resident in Augsburg. All of his partners were elite, either merchants, patricians or aristocrats. From a total of 51 surviving records of credit and debt relationships, 34 were not embedded. Only 18 of the creditors and debtors could be placed clearly in Augsburg.

A number of his unembedded transactions deserve note in this context. He participated with Ambrosius I Höchstetter in a number of transactions that involved credit

⁷³ Krag, *Paumgartner*, 61f.

⁷⁴ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 56*.

⁷⁵ Krag, *Paumgartner*, 46f; Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 56*, Nr. 580, 236.

⁷⁶ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 634, 270.

to Ferdinand I in exchange for silver or copper.⁷⁷ In 1525, he became involved with Ambrosius I and Jakob Villinger of Schonenberg in a mercury mining and sales partnership.⁷⁸ Two years later, he worked with Ambrosius I again in the sale of copper.⁷⁹ This last venture, which involved the sale of copper from the mines at Taufers, passed fully into the hands of Hans II in 1529, when the Höchstetters ceased payment.⁸⁰ Long before Hans II received monopoly rights in Idria, therefore, he was connected to the Höchstetters by a series of ventures that included a common interest in Idrian mercury and ended with the transfer of Höchstetter assets.

The financial transactions of Hans II show a predilection for the aristocracy; he loaned money to five and borrowed from 11 individuals with noble titles. None of his lenders or borrowers was a commoner, and the amounts involved in financial transactions far exceed those of his father. Whereas Hans I engaged in a range of local financial services, to judge only by his partners and their principles, lending to or borrowing from partners located primarily in his home towns of Augsburg and Nuremberg, Hans II offered capital investment services exclusively to the wealthy from Italy to the Netherlands and from Austria to Iberia.

His patron-client relations were also more extensive than those of his father, but Hans II drew from the same circle of families. He joined Anton Arzt and Hans Rehlinger

⁷⁷ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr 289, 137-8; Nr. 296, 140-1; Nr 337, 167; Nr. 497, 203-8.

⁷⁸ Pölnitz describes this as a sales partnership that included Paumgartner. See Pölnitz, *Anton Fugger*, I: 402 fn 49. There is, in fact, reason to doubt this attribution. The contract of sale involves Höchstetter and Villinger, making no mention of Paumgartner. It came into Paumgartner's hands, and can be found among the family's surviving documents to this day, because he would serve as a mediator in the dispute that arose in 1529 between Villinger's widow and the Höchstetters over the distribution of profits from the mercury partnership, itself a consequence of the Höchstetter bankruptcy. See Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 372, 165-6.

⁷⁹ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 52*

⁸⁰ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 497, 203-5; Nr. 574, 234; Nr. 575, 235.

as executor to the estate of his father and mother⁸¹, and he executed the will of his grandfather, Leonhard Rehlinger.⁸² He also lent his seal in 1543 to the marriage contract (*Heiratsbrief*) of Anna Fröhlich⁸³, a connection that is all the more fascinating in that her family defies every attempt at connection to the Paumgartner. He sought support repeatedly from the Rehlinger family: from Bernhard II to lend his seal to a business receipt in 1517⁸⁴; from Hans I to serve as executor to his will in 1519 and to seal a legal document (*Urkunde*) in 1530⁸⁵; from Christoph II to witness a testament in 1542⁸⁶ and again in 1543⁸⁷; from Leonhard Christoph to witness a testament in 1543.⁸⁸ But, he also looked to his own circle of trusted, business associates: to his Tyrolean associate, Hans Auslasser, to serve as executor to his will in 1519⁸⁹; to his Nuremberger associate, Hans Kleeberger, also to serve as executor to his will in 1519⁹⁰; to his brother-in-law, Anton Fugger, to lend his seal to a legal document (*Urkunde*) in 1539⁹¹; to another brother-in-law, Wolfgang Rudolf, to witness his testament in 1543.⁹² For the most part, moments in social or economic life that called for the official presence of a patron, a person in higher standing or authority, Hans II turned to members of his own family and a very few, trusted associates. Insofar as these functions signal relations of particular intimacy, trust

⁸¹ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 15, 10-1.

⁸² Pöllnitz, *Anton Fugger*, II: 388 fn 43

⁸³ Stadtarchiv Augsburg, Reichsstadt, Stadtkanzlei, Heiratsbriefe. **[Check this contract.]**

⁸⁴ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 6, 6.

⁸⁵ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 6, 6; Nr. 12, 9.

⁸⁶ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 67, 44-5. Interestingly, Hugo Engelin von Engelsee, an imperial counselor, served as first witness. He appears nowhere else in the surviving Paumgartner archive, leading to the supposition that Hans wished to established ties to a noble colleague on in imperial service.

⁸⁷ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 67, 44-5.

⁸⁸ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 68, 45-7.

⁸⁹ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 6, 6.

⁹⁰ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 6, 6.

⁹¹ Reinhard, *Augsburger Eliten*, 27.

⁹² Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 68, 45-7.

or cooperation, patronage in the more common sense of the granting of favors or spoils to allies does not seem to have extended beyond the family circle.

The first two Augsburg generations of the Paumgartner family witnessed a growth both in the extent and the embeddedness of their networks. This is not surprising. Hans I came to the city as an outsider, a bankrupt merchant of Nuremberg, who married into the Augsburg's elite and set about renewing his family's fortunes. His network reflects this activity. Though himself highly successful on the international mercantile and financial stage, the majority of his surviving connections were local. The range of his activities suggests as well a certain opportunism that did not scorn even modest ventures and transactions. Hans II began his career as his father's associate, well embedded in Augsburg's leading social and economic circles. The sheer volume of surviving documentation for his business far exceeds that of his father. Whereas this may be an accident of time, the changing character of his activities is not. The son made wide use of connections established by his father—close relationships with the Rehlinger, and Fugger—to which he added many of his own. He expanded the family's mining and metallurgical operations in Tyrol, seeking alliances with local businessmen, such as the Auslassers and Stöckls, and he entered more substantially into financial services for the aristocracy, especially the Habsburgs, working closely with other families, such as the Neidharts, the Haugs and the Manlichs. Successful business ventures and imperial services brought social preferment in its train, a process that likewise left its mark in a series of useful, social relationships and connections.

Given the aristocratic marriages their father arranged, the landed estates he amassed and the imperial offices and titles he received, the turn to a rentier existence by

his surviving sons and heirs, Hans Georg and David, comes as no surprise. Indeed, it seems consistent with the social and economic logic of the previous generations.

Recall that Hans II had four sons. Hans III, the eldest, died before his father. Anton, the second, was the black sheep of the family and disinherited. The two remaining brothers inherited their father's estate and business. Both married well, in keeping with his aristocratic ambitions and, presumably, his Roman loyalties. With Anna von Kainach-Leonrod, Hans Georg fathered four children.⁹³ Their eldest son, Ferdinand, married Elisabeth von Ramschwag. A daughter, Maria, married Christoph von Hohenems, a member of a noble family with a tradition of Austrian and Catholic service. Two other children, Hans Ernst and Eleonora, appear not to have married. His brother David, married to Ursula von Freyberg, had six children: Maximilian married Edeltraud von Wolfart; Regina married Hans Dietrich von Hohenegg; Anna Maria married Georg Bernhard von Ursenboeck; Johanna married Darius Castelletti; Isabella married a man named Weber; Susanna married a man named Menzinger. The lack of further detail regarding the last three unions may suggest that they occurred after the father's execution and disgrace. Noteworthy is the preponderance of aristocratic alliances, consistent with the strategy of Hans II and the ambition of his sons. All of these marriages ended without surviving male issue, so that this generation marks the end of the Augsburg line of the Paumgartner family.

Surprisingly few of these marital alliances—the sons- and daughters-in-law of their children's marriages, the parents, brothers and sisters of their spouses and the in-laws of their siblings—figure in any of the business activities of Hans Georg and David Paumgartner. As most these unions involved aristocratic families, they may have had

⁹³ Stadtarchiv Augsburg, Stammtafeln von A. Werner und F. Lilienthal, Baumgartner.

little to contribute to commercial or financial ventures. Certainly, none of those names appear among the partner, associates, lenders or debtors of either Paumgartner brother.

The same cannot be said of their father's marital connections. Hans Georg worked with his father's brother-in-law, Anton Fugger, as had his father. In 1549, they joined forces to provide credit to the Ferdinand I and Charles V.⁹⁴ References exist to later business contacts with Anton, Sebastian Neidhart and Anton I Haug in 1552.⁹⁵ In 1554, Hans Georg turned to Anton's uncle and successor as head of the Fugger enterprises, Hans Jakob Fugger, to handle a bill of exchange to Antwerp worth 8,500 fl.⁹⁶ The connection between the Paumgartners and Fuggers appears to have been waning. He also participated in exchange transactions of 400 and 300 French crowns and 400 gold fl in 1552 with Hans I Welser⁹⁷ and of 1000 fl in 1554 with the Ulm company, "Hans I Rot and Siblings," both families related to their father by marriage.⁹⁸ The heirs of Wolf Heinrich von Fels, a relative of his father's brother-in-law, owed Hans Georg 3,500 fl in 1556.⁹⁹ He also borrowed extensively from members of the von Stetten family. Kunegunde, a sister of Hans I, married Michael von Stetten. Hans Georg had extensive financial relations with the sons and grandsons of Michael von Stetten: an undisclosed sum owed to Christoph II in 1568¹⁰⁰; 4,000 fl owed to Georg II in 1565 and 1568.¹⁰¹

Interestingly, Hans II borrowed 4,000 fl from Georg I, the father of Georg II in 1549,

⁹⁴ It is worth noting that the brothers' engagement in Habsburg finance remained paltry compared to that of their father. Between 1549-51, they loaned the Habsburgs 6,000 fl. Over the course of his business career, 1517-49, Hans II fueled Habsburg ambitions worth about 727,000 fl. Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 33* fn 29.

⁹⁵ Krag, *Paumgartner*, 108.

⁹⁶ Friedrich Blendinger and Elfriede Blendinger, eds., *Zwei Augsburger Unterkaufbücher aus den Jahren 1551-1558: Älteste Aufzeichnungen über die Frühform der Augsburger Börse* (Stuttgart, 1994), I: 49.

⁹⁷ Blendinger, *Zwei Augsburger Unterkaufbücher*, I: 17, 18, 20.

⁹⁸ Blendinger, *Zwei Augsburger Unterkaufbücher*, I: 55.

⁹⁹ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 58*.

¹⁰⁰ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 20*.

¹⁰¹ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nrs. 629-32, 248-50/.

raising the possibility that Hans Georg inherited his father's obligation.¹⁰² David, too, had business relations with the von Stetten, like his brother owing 4,000 fl to Georg II.¹⁰³ Was it the same obligation? He also owed 5,000 fl to his own son-in-law, N. Weber.¹⁰⁴ These business relationships, embedded in marital alliances, remain fewer in number and less in value than those of the grandfather and father.

The conclusion that their economic relationships were largely not embedded would still, however, be premature. The connections to the von Stetten are but part of a larger pattern. In much the same manner that they inherited their father's estate and ambitions, they took over many of his connections.

Both Hans I and Hans II worked closely the Rehlingers, the family of Hans I's wife, depending on them for connections and capital. Hans Georg and David continued this pattern though not at the same level of intensity. Both borrowed heavily from them. Hans Georg owed 3,000 fl to Anton Christoph I and an undisclosed sum to Hieronymus I.¹⁰⁵ David owed 9,000 fl to Anton and 6,000 fl to Christoph I.¹⁰⁶ The only other record of transaction involves a bill of exchange issued by Konrad II to Hans Georg in the sum of 1,200 gold fl.¹⁰⁷

The changing levels of engagement with a number of important families, the Fuggers, the von Stettens and the Rehlingers, raises fundamental questions about the nature of these connections. Are they truly embedded? Marital connections to the extended family might possibly strengthen economic activities. In this case, however,

¹⁰² Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 56*. In 1568, Hans Georg also owed an undisclosed sum to the widow of Georg I.

¹⁰³ Krag, *Paumgartner*, 111f.

¹⁰⁴ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nr. 627, 247.

¹⁰⁵ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 58*; Nrs. 629-32, 248-50.

¹⁰⁶ Krag, *Paumgartner*, 111f.

¹⁰⁷ Blendinger, *Zwei Augsburger Unterkaufbücher*, I: 20.

most of the connections are two or three generations distant. Moreover, no records survive that indicate steady activity. Kunegunde Paumgartner married Michael von Stetten in 1484, but the two families had no further financial dealings until Hans II's financial transaction with Georg I von Stetten in 1549. His sons borrowed substantial amounts from the von Stettens, but their reasoning cannot be reconstructed. Did they turn to the von Stettens for capital because they were distantly related or because they had capital to lend? Similar doubt arises in the case of the Rehlingers. Hans I married Felicitas Rehlinger in 1485. Hans II maintained active relations with several members of his mother's family, including Bernhard II and III, Christoph I and II, Georg I, Dr. Hans and Konrad II. Some of those ties survive into the following generation, but his sons are neither so intensely involved with the Rehlinger nor involved over so broad a range of activities. These economic activities are embedded in the strict sense, but it is impossible to determine whether the parties involved understood their dealings as such.

Network theory and method have trouble capturing and weighing the changes over time of the ties that bind. What difference did their embeddedness make? It is broadly assumed that this quality matters. Modern studies in industrial sociology have demonstrated empirically that embedded relationships function differently and serve different purposes than so-called "arm's-length" relationships.¹⁰⁸ Embedded ties are thought to foster trust, the result of "extra effort voluntarily given and reciprocated." They are thought also to result in more detailed information exchanges that go beyond the price data thought by neoclassical economists to be the necessary and sufficient basis of market transactions. Finally, embedded ties are thought to encourage coordinated and

¹⁰⁸ See, for example, Brian Uzzi, "Social Structure and Competition in Interfirm Networks: The Paradox of Embeddedness," *Administrative Science Quarterly* 42 (1997): 35-67.

cooperative efforts to resolve market imperfections. Data drawn from participant observation methodologies suggest that these assumptions are often accurate. Social networks affect economic activities in modern firms. The same may well be true in the early modern period, but the evidence is often lacking. Participant observation is, obviously, impossible, and the surviving records are usually incomplete. Hence, historians can seldom peer into the nature of relationships, embedded or otherwise. They seldom capture the reciprocal exchange of favors, the sharing of “fine-grained” information or the negotiated solutions to shared problems.

This remains true for the Paumgartners’ dealings with the Fuggers as well. Related by marriage and connected by business to their father, Anton Fugger was an obvious business partner for Hans Georg and David. Yet, business relations between them are minimal. Whether they approached the Fuggers for assistance in their mounting financial distress remains unknown. In this case, embeddedness played no apparent role. Whether each succeeding generation turned to these increasingly distantly related families because they were socially related or because they were rational partners implies cannot, in the final analysis, be determined with certainty. Nothing suggests that the last generation of Augsburg Paumgartners achieved any particular advantage from them.

Hans Georg pursued many other business connections, most of them apparently unembedded. Between 1549 and 1556, Hans Georg remained active within a very narrow range of business. In the first year, he was involved in the aforementioned financial consortium with Anton Fugger, a sale of copper to Matthäus II Manlich, and a sale of mining shares to Hans Paul and Hans Heinrich Herwart, part of the transfer of monopoly rights in mercury from Idria. He also engaged in undisclosed business contact

with Kaspar Joachim Tänzl of Tratzberg in 1549¹⁰⁹, with Anton Fugger, Anton I Haug and Sebastian Neidhart¹¹⁰ and with Georg Bonenberger in 1552¹¹¹ and with Wolf Sattler and N. Menhard in 1556.¹¹² Between 1551 and 1556, the nature of his business seems to change. Hans Paul participated in 42 letters of exchange. Traffic in bills of exchange seems to have become his only business enterprise. He participated in three letters of exchange with the following individuals and companies: Hans I Welser, totaling 700 French crowns and 400 gold florins in 1552¹¹³; Hans Heiß, totaling 2,000 fl to Antwerp in 1552 and 4,000 fl to Antwerp in 1554¹¹⁴; “Joachim I Jenisch und Gebrüder,” totaling 6,500 fl to Antwerp in 1552¹¹⁵; “Alexander und Jakob Krafter,” totaling 1,000 Italian crowns, 3,000 fl and 500 Portuguese ducats, all to Antwerp in 1552¹¹⁶; “Hans Paul und Hans Heinrich Herwart,” totaling 8,000 fl to Antwerp in 1552 and 3,146 fl to Antwerp in 1554¹¹⁷. He participated in two letters of exchange with each of the following companies: “Jakob II Herbrodt und Gesellschaft,” totaling 3,190 fl to Antwerp in 1551¹¹⁸; “Georg I Österreicher Gesellschaft,” totaling 2,500 fl to Antwerp in 1552¹¹⁹; “Joseph I Jenisch und Gesellschaft totaling 1,000 fl in 1552 and 2,000 fl in 1555, both to Antwerp.¹²⁰ The remaining 19 bills involved partners who appear only once in Hans Georg’s surviving business records. The total face value of this traffic amounted to 58,660 fl, 5,000 gold fl, 1,100 Portuguese ducats, 300 Hungarian ducats, 300 *crusadi*

¹⁰⁹ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 54*.

¹¹⁰ Krag, *Paumgartner*, 108.

¹¹¹ Blendinger, *Zwei Augsburger Unterkaufbücher*, I: 18, II: 17.

¹¹² Blendinger, *Zwei Augsburger Unterkaufbücher*, I: 99, II: 17.

¹¹³ Blendinger, *Zwei Augsburger Unterkaufbücher*, I: 17, 18, 20, II: 51.

¹¹⁴ Blendinger, *Zwei Augsburger Unterkaufbücher*, I: 17, 29, 61, II: 17.

¹¹⁵ Blendinger, *Zwei Augsburger Unterkaufbücher*, I: 17, 41, 61, II: 17.

¹¹⁶ Blendinger, *Zwei Augsburger Unterkaufbücher*, I: 13, 16, 21, II: 17, 29, 30.

¹¹⁷ Blendinger, *Zwei Augsburger Unterkaufbücher*, I: 17, 21, 71, II: 14, 17.

¹¹⁸ Blendinger, *Zwei Augsburger Unterkaufbücher*, I: 1, II: 27.

¹¹⁹ Blendinger, *Zwei Augsburger Unterkaufbücher*, I: 17, 29, II: 17, 35.

¹²⁰ Blendinger, *Zwei Augsburger Unterkaufbücher*, I: 21, 76, II: 17, 46.

ducats, 1,400 Italian crowns and 1,100 French crowns. From 1549 until 1553, he and David were partners in their own firm. Thereafter, until his failure in 1565, during which time most of these exchanges occurred, Hans Georg pursued business on his own. Was he providing financial services for a fee, transferring capital between Augsburg, Antwerp and Lyon, or moving his own capital for purposes of his own? Certainly, his partners were a set of new men and firms, with whom the Paumgartners had not hitherto done business.

David left the firm after 1553, having abandoned it in favor of court politics. His independent engagements were few and unproductive. The surviving record lists only debts. Forty-three creditors made claims against him: more than 32,000 fl owed to 13 creditors in 1556¹²¹ and more than 204,000 fl owed to 11 creditors in 1563.¹²² Among his many creditors are only a few familiar names, Rehlingers and von Stettens as noted. Also some Paumgartners: David owed his brother Hans Georg an undisclosed sum¹²³; he owed his brother Anton 36,000 in 1565, probably a consequence of their father's testamentary arrangements mentioned above.¹²⁴ He owed his son-in-law, N. Weber, 5,000 fl in 1565, possibly the remains of a promised dowry.¹²⁵ All the others were newcomers to Paumgartner business. Of these, David owed the Nuremberg merchant and patrician, Bonaventura Furtenbach¹²⁶, the princely sum of 130,000 fl, against which he

¹²¹ Reinhard, *Augsburger Eliten*, 20-1.

¹²² Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 58*; Nrs. 627, 247.

¹²³ Krag, *Paumgartner*, 111f.

¹²⁴ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nrs. 627, 247.

¹²⁵ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nrs. 627, 247.

¹²⁶ Furtenbach may have served both David and Hans Georg as more than a creditor. His own career demonstrates exactly the kind of strategic upward mobility that the Paumgartners practiced. As successful merchant and patrician, Bonaventura acquired landed estates, was ennobled by Charles V and enabled his descendants to exchange the market for the court.

offered the market and castle at Thannhausen am Mindel as security.¹²⁷ **[Need to do much more with the inter-relationship of Paumgartner, Herbrot, Furtenbach and von Eck. See Häberlein, 224-42.]** There were other massive obligations: 10,000 fl to Sebastian Schertlin¹²⁸, 50,000 fl to Johann von der Leyen¹²⁹, 15,000 to Lazarus Schwendi¹³⁰, 33,000 fl to the heirs of Lazarus Tucher¹³¹, 16,000 fl to N. Langenmantel¹³², 10,000 fl to Philipp von Eberstein¹³³ and 119,899 fl to Oswald von Eck.¹³⁴ By contrast, he claimed only two sums due. Hieronymus II Welser owed David's heirs 2,500 fl in 1571.¹³⁵ Jakob II Herbrot owed him 164,630 fl in 1563.¹³⁶ Herbrot's own bankruptcy that year meant that David could not collect the money owed him or hope to pay the 204,000 fl owed to others. That fact spelled ruin not only for David but also for his brother, who had stood guarantor for his debts.

In less than a decade, the Paumgartners had disappeared from the European economy, where they had once been among its most powerful players. Both had already abandoned Augsburg, withdrawn to their landed estates, where they pursued other interests. Within two decades its surviving Augsburg leaders had fallen, one executed as a result of a failed political conspiracy, the other disgraced because of failed financial transactions. A rebel and a bankrupt might not be expected to leave many traces of patron-client relationships. More powerful individuals would avoid such connections as dangerous; less powerful individuals would do so as useless. Whatever the reasons for it,

¹²⁷ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nrs. 625-7, 246-7.

¹²⁸ Krag, *Paumgartner*, 111f.

¹²⁹ Krag, *Paumgartner*, 111f.

¹³⁰ Krag, *Paumgartner*, 111f.

¹³¹ Krag, *Paumgartner*, 111f.

¹³² Krag, *Paumgartner*, 111f.

¹³³ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, Nrs. 627, 247.

¹³⁴ Müller, *Quellen zur Handelsgeschichte der Paumgartner*, 19*.

¹³⁵ Stadtarchiv Augsburg, Notariatsarchiv Spreng, VI, Nr. 54.

¹³⁶ Stadtarchiv Augsburg, Fallitenakten, Herbrot.

Hans Georg and David do not figure as anyone's witness, signatory, godparent, trustee or executor. It seems an apt signal of the family's rapidly changing fortunes.

Over three generations the Paumgartner networks evolved in keeping with their social position in Augsburg. It is essential to think in terms of multiple networks, one for each generation or each member, rather than a single network for the entire family over time, because they display surprisingly little continuity. Beyond family members and their marriage partners, the number of members who remain connected over generations seems low relative to the total number of relationships at any one point in time. The size of Hans II's network exceeds that of his father's network. This may be a mere result of the historical record, the fact that more of his records survive, the fire in his chancery notwithstanding, than from Hans I, but it is also a natural consequence of the family's growing social and economic stature, not only in Augsburg but in all of Europe. The son was more successful and better established than his father. These networks evince increased embeddedness as well. Between the generations of Hans I and Hans II the number of multiplex relationships, in which social and economic connections overlapped, rose dramatically. Likewise, the social stature of the members rose, making the networks not only more exclusively elite but also more cosmopolitan over time. The network of Hans II reached well beyond the walls of Augsburg to include merchants and aristocrats beyond the region. All of these patterns changed abruptly in the third generation. Hans Georg and David embraced the destiny that their father seems to have prepared for them. His accumulation of estates, offices and titles, to say nothing of his business dealings with members of the aristocracy, might indicate a social aspiration. His family was elevated into the Augsburgers in 1538, and he restyled their name Paumgartner

von Paumgarten. He wished to become an aristocrat. Though he admonished his sons not to abandon the family business too swiftly, they began the process before his death. As the family's business assets were sold or abandoned in the third generation, so the networks of Hans Georg and David began to change. They remained aristocratic and cosmopolitan to a surprising extent, but they became smaller in size. The number of business connections declined, as did the level of embeddedness. Hans Georg engaged extensively in sales and exchanges, in most instances with persons who do not appear in any of the Paumgartner networks. David exited business altogether in the mid-1550s, but continued to engage in a high level of borrowing, again most often with persons outside the family's circle of relatives, friends and associates. Such behavior might be described as unproductive, devoted to consumption and corrosive of capital. Change describes the situation more accurately, however. Whereas the brothers withdrew from commercial and financial business, they remained actively engaged in the management of their numerous, landed estates. These generated income from a variety of sources and involved them in litigation with a variety of neighbors, some of which was appealed as high as the imperial supreme court (*Reichskammergericht*). The center of their activity moved deliberately from the city of Augsburg and the markets of Europe to aristocratic courts and the rural economy. The evolution of their networks captured the Paumgartners' changing social status in Augsburg. Their rise to prominence and their move to distance were deliberate strategies. Their relationships reflect those strategies.

By the time of Hans Georg's bankruptcy, in 1565, most of his economic activities were not embedded in social relationships. According to network theory, arm's-length relationships are less likely to engage in the exchange of favors to develop trust, the

sharing of information to promote efficiencies or the solution of problems through cooperation or coordination. The patterns hold in this case. The litigation and resolution of Hans Georg's insolvency show few indications of trust, information-sharing or cooperation. They are consistent with the actions of a non-embedded network.

Yet, the years immediately following were among their most successful, and the reason has to do with enduring connections. Even as they abandoned their father's commercial interests, they followed his confessional politics. As recently elevated members of the aristocracy, they attended the 1555 Reichstag in Augsburg. As loyal supporters of an imperial and Roman policy, they rose steadily in the Emperor's favor. Karg described David's activities as follows:

The youngest of Hans Paumgartners sons, he had an ambitious character and felt best in proximity to the emperor, where is found opportunity to gain influence. He continued his father's policy of subjecting the Swabian imperial cities to the emperor's authority and took part eagerly in the constitutional changes that occurred in them as a result of the Schmalkaldic War.

He established himself as a successful diplomat and as a useful financier. By 1555, Ferdinand I elevated him to "councilor and servant." His "experience" and "facility" were, indeed valuable. The Habsburgs had already borrowed no less than 38,000 fl from David alone. Nor were they the only ones. David provided loans to other courtiers and had to borrow as well to cover the costs of the court's extravagant life.

The carefully constructed network of relations to the aristocracy impelled him into dangerous financial maneuvers. He turned to his brother. Acting in his name, Hans Georg borrowed 129,000 fl from a number of Augsburg merchants, whose names are

now familiar, and stood guarantor for the loans. In other words, the brothers relied on an old, fading network, that of the commercial society that they had abandoned, to meet their need for credit. Some of their creditors were, as noted above, related to them by marriage: the Rehlinger and the von Stettens. Most were simply merchants of the same community, men who knew the Paumgartner name and reputation, even if they had never done business with them, such merchants as Sebastian Schertlin and Wolfgang Paller. Karg argues that David's indebtedness was fueled not only by his own profligacy but also by a worsening financial situation on the continent as a whole. Indeed, the late 1550s and early 1560s witnessed state bankruptcies in Spain and France that tightened credit across the continent. It seems likely that he was hounded by creditors, who were hounded by theirs in turn. It is no coincidence that Hektor Mair counts 73 major bankruptcies between 1545 and 1575. It seems unlikely, however, that Hans Georg would have been able to raise 129,000 fl in Augsburg alone, was credit so universally tight. In other words, the credit crisis did not so much precede—and, thus, cause or worsen—David's problem as make its solution more difficult. By 1561, with credit becoming increasingly scarce, he used his family's estates to secure further loans, in clear violation of his father's fideicommissus of 1539. To borrow 120,000 fl from the margrave of Brandenburg, Georg Friedrich, he signed away Hohenschwangau, the most valuable of the family's lands. Others followed. As his situation worsened, David's maneuvers became increasingly desperate. With Oswald von Eck, whom he owed nearly 120,000 fl, he entered into the ruinous series of loans from Bonaventura Furtenbach that would total more than 130,000 fl. By 1563, the situation had become common knowledge. Hektor Mair recorded the insolvency of David Paumgartner in his Memorialbuch and set the

total deficit at 300,000 fl. The total was much higher; Krag sets it at twice that amount, 600,000 fl. When Jakob II Herbrot ceased payment that year, David's desperate financial structure collapsed. He was, as noted, above, Herbrot's chief creditor. When it became clear that he was insolvent, David's creditors demanded payment and seized his property. The more substantial ones took charge of the landed estates; Hohenschwangau fell into the hands of the Margrave Georg Friedrich and Bonaventura Furtenbach, who sold it in turn in 1567 to the Duke of Bavaria.

Stripped of his estates and desperate to restore his fortunes, David descended into alchemy, conspiracy and, finally, treason. Party to a revolt of Imperial knights, led by Wilhelm von Grumbach, he was placed under the Imperial ban in 1566, caught at the siege of Gotha and executed in 1567.

His failure had hardly less drastic consequences for his brother, Hans Georg. Krag argues that he remained in Augsburg and in business, as his father would have wished, but the surviving record suggests reason for doubt. He seems to have trafficked in bills of exchange exclusively. There is no indication of a continuing engagement in commerce or manufacturing. Whether he offered financial services more broadly remains unknown. Certainly, he provided services to his brother, borrowing and securing credit in his name. He had futilely protested David's mortgaging of the family's estates, realizing that his brother's "mismanagement and profligacy" violated their father's arrangement and could draw the entire family into ruin, but he nonetheless agreed to aid him in his search for funds and, so, link their financial fortunes. When David's insolvency became insurmountable with the bankruptcy of Jakob II Herbrot in 1563, that guaranty took effect. The creditors turned to Hans Georg and demanded payment. He

refused to honor his commitment as guarantor, claiming that he was not responsible for his brother's irresponsible behavior, and remained on his estates outside Augsburg to avoid prosecution. Only when he entered the city on 5 March 1565 to attend the wedding of Sidonia Isabella Fugger, the daughter of Georg II and niece of Hans Jakob Fugger, with whom Hans Georg had had business dealings,—more evidence of the unpredictable impact of embedded relations on economic behavior—he was seized and imprisoned on order of the City Council. He remained so until his release on 3 May 1570. Too sick to care for himself, he died on 29 June 1570.

Krag asserts that Hans Georg refused to liquefy his estates to settle his obligations, referring to his father's fideicommissus, which forbade the mortgage or sale of the family's real property. The historical record indicates clearly, however, that appeals and sales took place. Lists of creditors exist from 1565. One lists the obligations of David, "so far as I recall," though it is not possible to determine who wrote or dictated it. It indicates known obligations worth more than 600,000 fl, owed to 14 creditors, including 130,000 fl to Bonventura Furtenbach, 120,000 fl to Margrave Georg Friedrich of Brandenburg, 120,000 fl borrowed on his behalf by Hans Georg, 50,000 fl to Johann von der Leyen, an official (Amtsmann) in Trier, 33,000 fl to Lazarus Tucher's heirs in Nuremberg, 15,000 fl to the knight, Lazarus von Schwendi, 15,000 fl to the Langenmantels in Augsburg and so forth. Clearly, the Paumgartners did some kind of reckoning. Then, on 3 June 1566, with mediation by an Imperial commission that included Duke Christoph of Württemberg, Hans Georg reached an agreement with his creditors. Twenty-five persons demanded payment of debts totaling 72,500 fl, many of which had transferred from David. Hans Georg agreed to pay 5 percent interest on the

entire debt within a one-year period. Within two years, one-third of the principle plus interest would be repaid, and the entire debt plus interest would be retired in four years. The estate Bach bei Erbach und Oberhausen would serve as deposit, which the creditors could seize in the event of non-payment. The agreement failed because Hans Georg defaulted on the first payment. Another contract, mediated once again by Imperial commissioners, was signed on 18 August 1568. The total obligation had grown to 90,775 fl 11 kr. Hans Georg agreed to pay this amount “from all his properties in Augsburg, the estates at Berg and Menchingen as well as the depository of Obenhausen and the noble estate of Bach.” Again, the conditions were not met. Karg’s assertion that Hans Georg would not or could not violate his father’s fideicommissus will not stand scrutiny at this point. On 30 March 1569, Hans Georg’s wife, Anna von Kainach-Leonrod, petitioned for her husband’s release from arrest, claiming that he had surrendered the contract of sale for his estate of Bach bei Erbach. Apparently, he was willing under extreme compulsion to part with family property. A final agreement, read in the City Council of Augsburg on 7 January 1570, settled the bankruptcy and led to Hans Georg’s release. With interest accumulated since September 1568, his debt had risen to 104,471 fl. Bankrupt and creditors had argued the value of various properties offered as security in the event of non-payment. These issues were important to both sides: undervaluation served the interests of the creditors, who could then demand more property to secure their capital; overvaluation served the bankrupt, who could then hold more of his property apart from the settlement. The final contract settled these debates and, so, opened the way for the transfer of property and the liquification of capital.

It had been a hard-fought struggle. Hans Georg had prevaricated at many points and failed to meet his commitments at others. The creditors had remained unyielding: No release from prison until payment was reasonably guaranteed. Indeed, it seems doubtful that any negotiation or resolution would have been possible without external mediation, ordered by the Emperor Maximilian II. As early as October 1565, he ordered the release of Hans Georg from prison, arguing that he had fallen into financial difficulty not through any misdoings of his own, but rather through his generosity in offering security to his brother, David. The City Council of Augsburg responded on 10 January 1566 that it could not accede to the Emperor's command. Hans Georg had offered security for his brother's debt and was, accordingly, liable for payment. Even his own brother, Anton, insisted on his continuing arrest, because Hans Georg had refused to pay the 1,800 fl due him as Leibgeding, according to their father's final testament. Worst still, the bankrupt had behaved disobediently and insolently (*ungebührlich*) toward the City Council and the *Stadtpfleger*, Heinrich Rehlinger. As a result, he remained in debtor's prison for five years.

What role did networks play in all this? The answer seems ambiguous. Surviving records yield no evidence that embedded relationships functioned to promote settlement. There appears to have been little trading of favors, exchanging of information or negotiating settlements. Even relations as intimate as those of blood proved unreliable: David ruthlessly violated his father's *fidei commissus*; Hans Georg refused all responsibility for his brother's profligacy; Anton saw prison as an appropriate means to force his brother to pay.

Yet, the conclusion that networks in no way shaped the agency of Paumgartner creditors, debtors, partners and relatives, that they acted with a cold eye to their own interest and utility without regard to any other relationships, experience or information, during the insolvency of the last generation would be premature.

Above all, the enduring connection to their late father and their obedience to his last wishes seems to have guided the brothers' actions in the first years. In 1549 and 1550 they took possession of their various landed estates, administering their real estate and pursuing their commercial interests in accordance with the directives of his testament.¹³⁷ Their differing interests and abilities soon made themselves apparent, however. The Tyrolean government required in 1553 that the brothers confirm the fulfillment of various, contracted sales of silver, because "[it] had received reliable indications that they had suffered considerable disadvantage with the loss of many other contractual rights."¹³⁸ Thus, by the time the Paumgartners sold their mining rights to the Hans Paul and Hans Heinrich Herwart, their disinterest in and incapacity for business, especially mining, had become manifest. The sale of Tyrolean mining interests in 1553 marked a twofold departure from their father's will: The brothers alienated the family's most profitable venture; they henceforth pursued their affairs as separate undertakings rather than as a common, familial enterprise.

It seems undeniable that the Paumgartner networks, constructed with such care by Hans I and Hans II, dissolved in the hands of Hans Georg and David. They ceased commercial activity for all intents and purposes, moved their centers of activity from the

¹³⁷ Krag, *Paumgartner*, 107-8.

¹³⁸ "...glaubwürdig erfahren hatte, dass sie einen ansehnlichen Verlust mit mehreren anderen ihren brieflichen Gerechtigkeiten zu ihrem merklichen Nachteil genommen haben." Cited by Krag, *Paumgartner*, 108.

city of Augsburg to their various rural estates, and turned their attention to aristocratic engagements. As a result, what relationships remained were for the most part new and strange. Most of the creditors listed by David and Hans Georg were neither relatives nor associates of the Paumgartner. Most of Hans Georg's business contacts were likewise new men in the sense that no records exist of their having done business with the Paumgartner in the past. All parties reacted accordingly, once the bankruptcy proceedings began. The record gives no indication of favors exchanged, information shared or cooperation offered. Each side clung stubbornly to its interests and refused voluntary concessions. All of this suggests non-embedded, arms-length relations between debtor and creditors. Even relations as intimate as those of blood proved unreliable. What remains is the Habsburg connection. The Emperor intervened on behalf of this unfortunate scion of a family that had served him and his long and well. Unfortunately, his defense of a loyal servant bore no fruit.

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The words of Hans II Paumgartner's spokesman ring sadly true: "The fire caused him such damage, loss or destruction that it could yield him real disadvantage one way or another in the future."¹³⁹ Such mischances happen all too often, and they make the historian's task so much harder. Business, to say nothing of bankruptcy, is an exercise in hidden knowledge. Past or present, businessmen do not willingly reveal their trade secrets. They seldom publicize the true nature and value of their enterprises and

¹³⁹ *Denn durch den brand sei ihm ein solcher schaden, abgang oder verwüstung beschehen, der ihm in künftiger zeit in ein oder ander weg an bewisungen oder sonst möcht nachteil gebären.* Müller, Quellen zur Handelsgeschichte der Paumgartner, Nr. 63, 40-1.

transactions. They shield their investments and techniques from outside eyes. They withhold information about joint ventures and cooperative agreements. Early modern charters uniformly prescribe secrecy for all signatories. Company business is for insiders only, even immediate family members were to be kept in ignorance for the sake of the firm.

In consequence, historical knowledge of past business is usually incomplete, sometimes completely so. Accounts, reports and contracts provide limited perspectives, seldom the complete picture. Historians learn what these merchant-financiers planned but not necessarily what happened. They read about the costs but seldom discover the profits. They identify the associates but rarely understand the relationship. In the cases of the families and firms, engaged at Idria between 1525 and 1574, the networks reconstructed above are undeniably incomplete. Not only can the full extent of the business relationships of each individual, each family, each firm not be recovered, but also the actual nature of single deals remains largely obscure. Transactions can be described or analyzed at one particular point in time, but not their development over time. Surviving documents too rarely permit it. Their social relationships remain even more obscure. The roster of relatives, friends, neighbors and acquaintances cannot be completed, because no one wrote such things down. Likewise, the duration, intensity and mutability of these connections defy scrutiny. The networks that emerge are, as noted so often above, static forms that capture some but not all relationships, gloss over the intensity or intimacy of those that they do, and permit only speculation about the reasons for their existence.

The Paumgartners were a family of outsiders, socially and, quite possibly, morally. They were bankrupts from Nuremberg. Studying their networks over three generations, it appears that their connections served initially to establish them in the community of Augsburg merchants. As they became known and reputable, the level of embeddedness and multiplexity grew. The decision, prepared in the second and executed in the third generation, to leave the city and the market for a life as landed aristocrats, substantially ruptured this pattern. Embeddedness and multiplexity diminished; a large proportion of new social and economic relationships appeared. As might be expected of arm's-length relationships, they displayed little propensity to exchange favors, share information or negotiate agreements, especially during the bankruptcy of Hans Georg.

In none of the firms did patron-client relationships or confessional relationships play a significant role. Though many of the partners offered or asked personal favors with social-status implications—serving as godparent, witnessing or sealing a contract, acting as trustee or guardian—of others, their partners were most often members of their own families or social equals. Such connections seem to have served to solidify familial solidarity rather than extend or embed useful relationships. Confession seems to have been even more marginal. Neither business nor social relations appear to have been substantially affected by considerations of confession.

Yet, so much remains unclear. Networks themselves are not agents. They cannot act on their own behalf; rather, their constituent members act for themselves, sometimes cooperatively, sometimes not. Membership in a network may predispose individuals to act in a certain manner, favoring other members as determined by confession, status or relationship, but it does not consistently predict that action. Business or economic

relations were often embedded in social relations, the former being but a specialized variety of the broader latter. Embeddedness is not always apparent, however, and its effects cannot always be determined. It seems to have played a role in the resolution of bankruptcy, but that role is itself ambiguous, sometimes positive in the sense of mutually useful and acceptable solutions and sometimes negative in the sense of destructive or vindictive persecutions. The claims of neo-institutionalists notwithstanding, there is no evidence in this case to demonstrate a reduction in transactions costs or an increase in social capital. The notion that agents prefer to deal with what is familiar does not rise empirically above the heuristic and tautological. Until network methodologies develop a set of techniques for capturing change over time and autonomy of members, there seems little prospect for greater empirical rigor. Connection does not determine relationship; relationship does not explain motive. Social networks are themselves exercises in hidden knowledge.