

## **Class, property, and structural endogamy: Visualizing networked histories**

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The problem central to this study, of delineating the properties that qualify individuals as members of a class, was opened by Bourdieu:<sup>1</sup>

The individuals grouped in a class that is constructed in a particular respect[such as a socio-occupational category taken as an indicator of position in the relations of production governing economic practices] ... bring along with them ... secondary properties which may function as the real principles of selection and exclusion.

Bourdieu goes on to identify several ways this problem poses a dilemma for the sociologist who attempts to define class objectively, on the basis of similarities and differences in “class situation.” First, specific economic criteria are commonly grounded in processes whereby selection and exclusion in the social field may also operate to govern qualification and practices. Second, “objective” classifications can themselves be classified as objects, possibly revealing how social analysts differ in what they take to be the primary defining criteria<sup>2</sup> of such class groupings. Third, differences in the criteria for class indicators – even down to formal and social qualifications for achievements – may mask hidden criteria (caught up, for example, in the very struggles between social groups or classes). For Bourdieu,<sup>3</sup>

The division into classes performed by sociology leads to the common root of the classifiable practices which agents produce and of classifiable judgments they make of other agents’ practices and their own. The habitus is both the generative principle of objectively classifiable judgments and the system of classifications ... of these practices.

Bourdieu’s problematic is the generation of life-styles of “classified and classifying practices” by different internalized cultural dispositions or habitus<sup>4</sup> (“structured and structuring structures”) located in a class of conditionings (“objectively classifiable conditions of existence”) and a

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structuring structure of positions within these conditions of existence.

However, in Bourdieu's model of distinctions, the "structure" and "structuring" of habitus are treated largely at the level of preferences and tastes, while the structural differences in "conditions of existence" that induce or support different systems of habitus and lifestyle are largely underexplored.

We revisit the problem of class grouping in a different way, not unrelated to habitus, through historical investigation of networks of linkages that define the economic and social spaces in which people move, of the ways these linkages define "class situation," and the way that social as well as economic linkages select and exclude access to differential positions. For certain of our key indicators, rather than taking groups as defined by similar attributes, we define them by how people are linked. Our approach is not dissimilar in principle to Weber's,<sup>5</sup> who defined "social class" as the set of class situations connected through ease of mobility.

Thus, Weber used a network property of strong connectivities to define an emergent unit: a number of sets of people in equivalent class situations constitute a social class because of the relative ease of mobility among the positions they occupy.

There is a curious ambiguity in Weber's distinctions between class and status. On the one hand, class is held to be definable purely in terms of economic position with respect to the commodity and labor market: class situation is ultimately market situation.<sup>6</sup> On the other hand, the market is constituted on differential relations to property, and these differences themselves are related to the creation of differential life chances in economic terms. Property considerations then cannot be divorced from class as an economic construct. Yet, the "holding" of property is necessarily outside of the market: the biography of property is a particularistic one, bound by social relationships that channel its inheritance within particular sets of personal biographies, such as those linked by kinship and marriage.

As property flows through a social network, its biography unfolds as a history of transfer from person to person or group to group, as it is shared and divided.<sup>8</sup> Property is at the heart of the modern economy but cannot be divorced from considerations of status. That is, some transfers of ownership are market transactions, others are bequests, gifts, inheritances: transfers that pass through intrinsically social relationships. Marx is under the illusion that the only way to abolish status differences from the economic "system" is the abolition of property

itself; an illusion because even in pre-capitalist societies, or with a minimum of private property, status and possession (of material or symbolic objects) are mutually implicated. Likewise, there are different systems by which status and possessions are entwined, and many historically particular variants of class structures.

In our view, institutions, such as the complexly varied morphology of class differences of societies and regions, emerge out of networked actions and choices devolving in turn in a specific and changing historical context. People's lives are influenced and shaped by the flows or biographies of property, just as property is shaped by people's biographic rights and claims.<sup>7</sup> Much as rains inscribe riverbeds to carry flows that continually reshape the morphology of river networks, property – in passing hand to hand through a network of people – inscribes in turn changing relations that reshape social networks and social roles. Institutions, like the morphology of class differences, emerge out of networked action.<sup>8</sup> If change progresses at different rates in different domains and in different regions and societies, it is partly because of the history and the intertwining of property, biography, and other structural formations.

This article explores the duality of property and biography to draw out implications for social groups and for theories of class reproduction and transformation. In looking for a good case-study example of our general theoretical view of institutions emerging from networked action, one that would allow us to think about how social classes are constituted, we were fortunate that a village we know intimately through fieldwork bore directly on issues of farmstead property, property rights, sale, occupation, marriage, residence, kinship, and inheritance, on which we had data. The importance of property is examined in terms of how its transmission relates to decisions of marriage, to occupational choice, and how it mediates such choices. Networks form channels of transmission of goods, services, and personnel so that, in Lévi-Straussian terms, systems of alliance through marriage are important parts of social systems. They are important elements in the construction of inter-generational networks, including kinship linkages. They also channel property. As a guiding question in the analysis, we ask: how are matrimonial alliances and structures related to property transmission and class formation?

### The concept of relinking

Relinking is a concept of structural anthropology developed in contemporary and historical studies, particularly by researchers in France such as Jola, Verdier and Zonabend, La Maison, and Segalen,<sup>9</sup> who have shown the importance of marital relinkages between families as a means of alliance in European villages. Marital relinking of the ancestral lines of two or more couples occurs when there exists a circuit of consanguinal links among them. For example, say we have three couples (1, 2, 3), A married to B, C to D, and E to F, where B and C are consanguinal relatives, as are D and E, F and A. This creates a circuit – a series of adjacent vertices (here: the couples) that begins and ends with the same point – of consanguinal ties<sup>10</sup> among the couples: 1 to 2, 2 to 3, 3 to 1. As noted by LaMaison,<sup>11</sup> the phenomenon of families relinking through marriage is a specific realization of Lévi-Strauss's concept of generalized or indirect exchange, through a series of connected marriages. While he did not use the concept in his French village studies, Bourdieu<sup>12</sup> viewed matrimonial alliance as one of the variable strategies “of biological, cultural and social reproduction that the whole group set in motion to transmit, maintain or increase, the powers and privileges it had inherited to the next generation.”

Our goal is to operationalize fully the concept of relinking in a graph-theoretic perspective<sup>13</sup> by defining the social units constituted by relinking. Some form of relinking is expressed wherever we can complete a circuit of ties in a genealogical network, after eliminating redundant ties within the nuclear family (such as ego to parent to other parent back to ego). The concept of relinking is developed further in our study according to a formal concept defined in the theory of graphs<sup>14</sup> that is precisely suitable for capturing the structural units of relinking in network analysis. The concept we use is that of blocks in a network: sets of points that are as large as possible where all pairs of points within blocks are connected by one or more circuits (series of adjacent vertices that begin and end with the same point). To tie together the concepts of graph-theoretic blocks (not to be confused with the blocks of network blockmodeling) and relinkings (as represented by our particular mode of drawing kinship graphs), we may say that couples who are matrimonially relinked are in the same block (and so are all the couples who relink them) since they have not only one connecting path, but two or more.

In the genealogical graphs for our Austrian case there are many circuits created by relinking marriages, and many of them overlap to form larger

blocks. Blocks and circuits differ fundamentally from simple intermarriage between two families, since circuits of relationships glue different families together in an entirely different way. Every family story, every piece of gossip or information, can be received and cross-checked through two different connecting paths of transmission. This ability to corroborate intimate “family” information independently through paths that are independent may serve to reinforce other relations in the network, as for example, those of trust or enmity, and in-group or out-group membership norms. In the present case, by identifying such blocks we are better able to study the constitution of class differences both in intermarriage and the transmission processes governing the flows of property.

Matrimonial blocks entail easily recognizable social boundaries that may be involved in a variety of social inclusion/exclusion processes. In a small population, circular paths of transmission of gossip imply that intimate information from the same source or event may arrive through two entirely independent channels, and thus cross-checked for corroboration. Since common block memberships have consequences for knowing the validity of information transmitted, and people can easily trace their boundaries, block boundaries may be memorable as important social knowledge. Subgroup boundaries, norms, and sanctions may reinforce further differentiation within the social circuitries internal to blocks. Given their importance in intimate social life, boundary maintenance of or within matrimonial blocks may become an object of strategic action,<sup>15</sup> a concrete objective of individual strategies, and to that extent we may connect block or subblock formations to social strategies.

When this is the case, we are likely to find strong consequences of social-boundary formation for economic relationships. Matrimonial relinkings have a dual aspect at the boundary between the individual and the social. While at the individual level they may embody specific marriage strategies, when considered sociologically, they may have group and boundary formation as a consequence.

### Relinking, structural endogamy, and social class

We commonly think of endogamy as marriage within a given category, yet social classes are only partially endogamous, unlike strongly or exclusively endogamous castes. Perhaps the tendency to endogamy – in ordinary categorical terms – is the wrong concept to be associated with class.<sup>16</sup> Blocks of relinked marriages have some curious properties that

lead us to characterize structural endogamy as a special form of endogamy that occurs within blocks. Blocks are not a category in the ordinary sense, however. Unlike the perfect case of ordinary (categorical) endogamy, not every couple in a block is required to have married within the block. Marriages may span two or more blocks, not be endogamous to any of them, and yet be a part of each one because different circuits in each block pass through them via their parents and children. Endogamy within blocks, structural or circuit-block endogamy, is thus a characteristic only of the relinking marriages in any given circuit within the block; other marriages involved in linking families within a block are not required to be block-endogamous. Structural endogamy is, then, only a partial endogamy. Yet, structural endogamy is the root form of endogamy in that without patterns of relinking we should not properly speak of marriage as inward-oriented at all, if by endogamy we mean to refer to a category or population in which there is a tendency toward inbreeding. The proper evidence of inbreeding or endogamy in a population is the relinking of marriages. Imagine a set of people who share some distinctive property as an ensemble and with their marriage partners, and yet whose marriages conspicuously avoid the relinking of families. If some subset of these people are linked by kinship and marriage, the pattern of their linkages is then strictly in the form of a tree – a network with no cycles. In just such a case we should say that the group is strictly exogamous, since marriage is avoided with anyone who is already linked. Such a group, then, might be homogamous, but without being in the least endogamous.

Relinking offers two possibilities for the expression of inbreeding, social and biological: in the first, relinking is among two or more families by as many marriages, where the marriages are not between relatives; in the second, relinking takes place within the same family where a marriage is between relatives and the couple share at least one common ancestor.

Only in the second type, commonly called blood marriage, does relinking translate into genetic inbreeding in the population. The sociological concept of endogamy, however, includes the possibility that population inbreeding may be purely social.

To understand the integration of marriage strategies, land transmission, and communicative or symbolic strategies, it is useful to consider Lévi-Strauss's<sup>17</sup> notion of exchange and of boundaries in communication thresholds in matrimonial, goods, and services exchange networks. Exchange theory provides grounding concepts for the constituent networks that link social action in the domain of study.

A society consists of individuals and groups which communicate with one another. The existence of, or lack of, communication can never be defined in an absolute manner. Communication does not cease at a society's borders.

These borders, rather, constitute thresholds where the rate and forms of communication, without waning altogether, reach a much lower level....

In any society, communication operates on three different levels: communication of women, communication of goods and services, communication of messages. Therefore kinship studies, economics and linguistics approach the same kinds of problem on different strategic levels and really pertain to the same field. (Lévi-Strauss 1963: 296).

With this conception in mind – along with prior studies by Brudner (1969, 1972, 1979), Rebel (1983), and others – as impetus for the collection of data in each relevant domain, the present study connects the flow of personnel as it intersects with the flow of property to construct village institutions such as social class. This is done via the constituent networks that link social actions (heirship, marriage, and residential movements) in the two domains studied. Heirs, for example, form a particularly strong communicating core, while non-heirs do not. The conception of multi-level exchange helped us to conceptualize and construct village networks and the flows of personnel as they shape institutions such as family and social roles, and to explore certain aspects of social-class formation.<sup>18</sup>

In Austria's farming valleys of southern Carinthia, the perpetuation of Slovenian ethnicities and Windisch dialects has been associated with heirship of farmsteads, and with attempts of farmer groups to produce monopolies in local lands. Brudner has shown<sup>19</sup> how matrimonial strategies are but one part of a complex system of exchange and communication that sets apart or inscribes the dominant core group of a village and distinguishes it from others both within and outside the village boundaries.

The present study – of the transmission of property, and changing social construction of class in a Carinthian farming community – merges different bodies of theory to inform a processual understanding of how local institutions, through social networks, channel property flows while the latter, dually, alter the constituent networks (e.g., of heirs versus non-heirs) that inscribe institutional morphologies. It illustrates and gives a dynamic account of the emergence, maintenance, and decline or shifting importance of institutional forms, where the causal account and constraints are carried by the networking of social action, shaped both at the local level and via interaction with the changing shape of historical

events in the wider world. It also helps to understand how impartibility operates as one of the key elements of the Carinthian farming system.

Impartible inheritance passes a farmhouse and its associated farmlands, undivided, to a single heir. It greatly increases the likelihood of continuing success of farm ownership. It also splits the farm family into two components: farm heirs and non-heirs. The success of the farm heir stem families, however, also implies that non-heirs in an impartible farming system need not be disenfranchised. The farm, if successful, can generate wealth beyond that needed to maintain farmstead viability, and invest this wealth in bequests or inheritance given to those siblings who are not principal heirs. Typically such payments take the form of quitclaims by which further claims on farmstead property are forfeited.

Dowries to daughters are typically paid as quitclaims. Many of the non-heirs from undivided farmstead villages in Europe are empowered to emigrate, and to set up in successful urban occupations, because they are sufficiently well endowed with quitclaim payments. Some of the more successful farms are able to endow their farm-leavers with sufficient education and resources to enter commercial or professional strata in town. With urban success, a farmstead may eventually be abandoned by its extended family of owners.

The hypotheses below describe a dual network process of social-class formation through intermarriage on the one hand and property consolidation on the other. What is unusual about the type of social-class formation involved here is that intergenerational transmission of class membership tends to be inhomogeneous in assigning asymmetric class positions to members of the same sibling set. Hermann Rebel's *Peasant Classes: The Bureaucratization of Property and Family Relations under Early Habsburg Absolutism*<sup>20</sup> makes the same argument for impartible heirship villages in Upper Austria, except that his analysis is of economic-class position and only secondarily of social-class formation via social networks. He uses Weber's objective criteria of economic class situation,<sup>21</sup> defined by probability of procuring goods, gaining an occupation or a position in life, and finding satisfactions that derive from relative control over goods and skills and from their income-producing uses within a given economic order.

Weber contrasts class in the economic sense to status (Stand) groups, which he assumed to be primarily defined by the subjective relations of prestige or esteem. The shortcoming of his concept of status groups is that if they are defined primarily as "a plurality of persons who, within a larger group, successfully claim ... a special social esteem, and possibly



also ... status monopolies,”<sup>22</sup> there is a tendency to make overriding assumptions about the composition of groups sharing the same esteem.

Rebel makes this point abundantly clear for Upper Austria, where “status groups” are an apt designation for the social class of owners of large undivided farms. If we were to apply the status-group concept there, sibling sets might be incorrectly assumed to share the esteem relations accorded their original domestic unit. The ambiguity of “status privileges” of the owner class of Carinthian farmers, however, calls Weber’s definition of “status groups” further into question. In the present study, we prefer a more detailed approach to the social relations that constitute status situations as locally perceived. Yet, although Southern Carinthian farmsteads are very different from those of the large-farm region studied by Rebel in Upper Austria, where status groups are of a higher order in the larger class system, our hypothesis arrives at a parallel conclusion about an objective difference of class situation of farmstead heirs versus non-heir siblings. We show that it is just as important to understand the social relations as the economic relations that constitute the ordinary class system in the changing context of historical Austria.

The historical forms of property regulation, management, and inheritance produced rural social cleavages even within sibling sets that led to an outbound labor force on the one hand, and varying rural capital formations on the other. The Austrian case raises a number of fundamental theoretical questions that affect how we view class formation.

Impartible-core heirship often emerged in the early modern period under the purview of feudal Estates: united political corporations (called *Stände*) consisting of peasant farms, manors, and other rural possessions and incomes agglomerated by the high nobility, and often subdivided internally into status groups. The division between heirs and quitclaimed out-migrants from the rural villages introduced, almost immediately, the preconditions for social movement into urban and protoindustrial occupations that acquired significance in the modern sense of social classes. In Weber’s sense of social class, the “class-situation” of farmstead heirs connects not just to the larger social class of rural labor, through the necessary movement of their children, but to that of urban workers. Hence, there is an immediate “early modern” social-class development evolving out of the class situations so produced.

Yet, there are also a host of other characteristics of the farmstead owner’s social orbits – their structural endogamy, their internally valorized prestige rankings, their distinctive lifestyle, their qualification criteria in

terms of empirical training or background for farming – that give them some of the attributes of status groups, even in those environments where they are not highly esteemed in the larger society. And, finally, we cannot underestimate the importance of certain of their self-maintained legal entitlements that carry over from the feudal/post-feudal era of Austrian Stände (Estates) as these also shaped the social system. Yet, from their very inception, the system of undivided farmstead inheritance was not a predetermined, legal status social “order” in which individuals’ positions are strictly determined at birth. Rather, in terms of competition among siblings for heirship status, class positions were partly achieved by appropriate role behavior within the family and through appropriate marriages and community approval.

### Hypotheses

This study takes as its principal focus one major element of social networks, the genealogical ties of an Austrian farming village, and one major element of property, namely, the transfer of virtually undivided farmsteads, to test one major institutional hypothesis: that two social classes emerged historically in this village and have long remained distinct as a product of differential marriage strategies.<sup>23</sup> The hypothesis is that a structurally endogamous farmstead-owner social class emerged from marriages that relinked stem family (heirship) lines that were already intermarried. The relinked couples inheriting farmsteads, as described by Brudner,<sup>24</sup> recombined primary but reduced heirships with secondary quitclaim land parcels (thus reducing another heirship), making for some stability in reconstituting “impartible-core” farmsteads. These marriages between primary and secondary heirs tended to constitute, by relinking families, a structurally endogamous and propertied class of couples. In contrast, marriages of non-heir couples did not tend to relink local families or to form a localized structurally endogamous group either with or separate from that of the propertied couples. Non-heir couples linked into broader social classes outside the village through marriage and migration to urban areas, but from the point of view of informants they did not constitute a structurally endogamous network.

If the main hypothesis is valid, it would help resolve a problem in understanding the so-called impartible farmstead system: namely, how do farmsteads manage to keep their property together when inheritance claims, including land, are paid out (as quitclaims or dowries) to secondary heirs? The answer is that the farmsteads of primary heirs are

reduced land-wise by quitclaims to siblings who may subsequently reunite them – as marriage dowry – with the reduced farmsteads of other heirs. Farmstead, then, need not be strictly undivided to be reconstituted, on average, in each generation.

If we insist on a distinction between structural endogamy and other forms of endogamy in this analysis, it is for theoretical reasons. Analytically, endogamy is a relative concept requiring some a priori distinctions or categories for classifying persons as well as some specified population in which “rates” of endogamy can be assessed. How would one test a hypothesis about heirship and endogamy, for example, with so elusive a concept as categorical endogamy? The only well-formulated relationship with simple endogamy would be that of marriage of heirs to the children of heirs. This we test as an alternate hypothesis. If we further reject the alternate hypothesis in addition to accepting the main one, we contribute to showing how structural concepts in network analysis can be mobilized to account for fundamental social processes with significant emergent properties at the sociological level, such as the mechanisms involved in class formation.

The specific contribution we make here is to show how elements of class position and status groupings emerge out of matrimonial relinkings in social circles that are so specifically circumscribed as to include certain siblings and exclude others. These inclusions or exclusions are directly related to the flow or transfer of property and to the maintenance and control of property relations by social groups or classes. Note how our concept of the duality of the individual biography in relation to property plays into the hypothesis: while property flows through a social network, so do the actors in the network, encountering these flows of property, transact new property relations thereby inscribed in the individual biography. We use this duality to show how matrimonial relinking helps to reconsolidate previously divided property.

Marriage is one of the significant points in the individual biography (along with birth, death of parents, et cetera) at which new property relations are inscribed. Spouses bring different pieces of property to the marriage, gifts are given, property is transferred in anticipation of inheritance, parents may give dowries to brides (or bridewealth to brides’ families), and implicit or explicit marriage contracts allocate new property rights and obligations.

The individual-level strategic elements of this farmstead system, then, are: who shall be the primary heir for each property; which of the other siblings or inheriting relatives will marry heirs; which siblings will be paid quitclaim dowries in land, productive property, or capital; and finally, at the end of the process of inheritance, marriage relinking and farmstead reconstitution in each generation, which farmsteads augment in value – accumulate wealth – and which do not? Some of these questions and concepts are amplified below. But there are other strategic elements that take place at the sociological level, such as: how are social boundaries formed and groups maintained through relinkages, how are descendants allocated or recruited among farmsteads, how are outsiders excluded from access to resources, how is accumulated wealth allocated in terms of market alternatives?

Two subsidiary hypotheses about strategic phenomena are tested. One is whether there is a qualitative difference between farm buyers and farm heirs in terms of matrimonial strategy and colonization of households through purchase. We contextualize this problem in terms of a game-theoretic conceptualization of competitive strategies. Second, we test whether the marital relinking patterns that we observe empirically depart from what would be expected in a random mating pattern within the population.

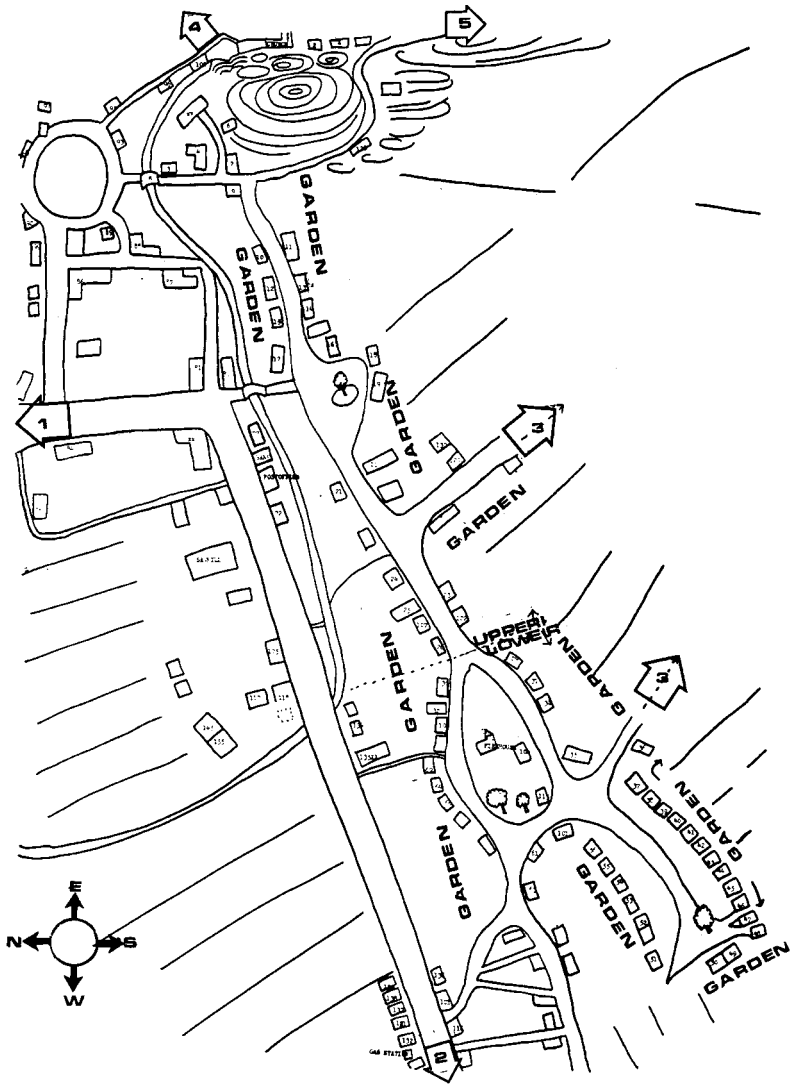
### Analyses of relinking patterns

In the sections that follow, we proceed with various graph theoretic block analyses of matrimonial relinking, and relate the patterns of relinking to problems of class analysis: purchase and sale of farmsteads, farmstead colonization, farmstead inheritance, its relation to matrimonial blocks, the time frames in which such blocks contribute to class integration, et cetera. We are fortunate to have two general types of data on Feistritz farmsteads. The first are precise records on farmstead transfers from the sixteenth to twentieth centuries compiled by Herbert Michor from Wasserleonburg Estate records.<sup>25</sup> The second are genealogical and family-history interviews conducted in 1967-69 by Brudner (1969) for 36 (40 percent) of the farmstead families in Feistritz and the one family (house 2) of church Deacons, supplemented by written records of farmstead ownership. For the 89 active farmsteads in the households numbered 1-100, we trace ownership for 44 percent back to the sixteenth century, and for 29 percent to the earliest farmstead records (and possible property reform date) of 1527. With current residents,

interviews were designed to elicit genealogical connections of all living relatives and remembered ancestors or collaterals, the history of marriage arrangements, and how families acquired their farmsteads and lands. The genealogies collected covered a goodly portion of the data on the occupants and ancestors of farmsteads in the village who were not directly interviewed. Informants were often able to provide birth and death dates for their relatives, and these proved to be accurate in most instances. Their accuracy was checked by White, who collected missing data from gravestones and church records going back to the late 1800s. Thus, quality of data for this study also differs according to two broad time periods. Between 1527 and the 1850s, the principal data are household ownerships. Only from succession of family names do we know which are paternal heirs. From 1850 to 1960, memory culture data from informants' genealogies given in interviews are quite extensive, and are supplemented by gravestone and church records. It is for this period that the study of matrimonial relinking emerges as a possibility.

Of a total 2,332 couples in our study, listed as relatives by our interviewees, or listed in historical records concerning the farmsteads, 1,700 pertain to the period 1850-1960. Of these, 416 couples are involved in relinking, and 367 of these relinked couples are also relinked within all 154 houses of Feistritz itself. Of the latter, 245 couples are involved in relinking through ties of residents in households 1-100, which include all of the active farmsteads. In each case, almost all of the couples are relinked in a single comprehensive block. There are a few very small residual blocks resulting from marriages of two siblings with members of another sibling set.

In studying the matrimonial structure, we are also interested in spatial patterns. The earliest map we have of the village dates from 1759. At that time there were 67 farmsteads attached to Castle Wasserleonburg, 15 to Castle Strassfried, 5 to Castle Weissenfels, 5 to the church, and 2 to the church of Arnoldstein, for a total of 84 households. The plan of the village, layout of houses, and number of farmsteads is very close to that of 1968, shown in Map 1. Of the first 100 numbered houses, six now stand empty (5, 49, 70, 82, 94, 98), but the two houses of the church (1-2), three mills (3, 28, 100), and 79 of the remaining 89 farming houses are continuous with those of 1759. The village population was also relatively stable from 1759-1961, fluctuating between 618 at the lowest census (1923) and 720 at the highest (1869). From the 1960s to the present the village has grown, with the addition of businesses and houses (numbering now up to 154) to its current population (1994) of 821.



Map of Feistritz, 1968.

### The mortgage and buyers' network (wealth, mobility, education)

The Austrian Stände or noble Estates of the Habsburg era were hierarchically organized such that the Crown operated as lienholders for estate mortgages held by the landed nobility, and noble landholders in turn were lienholders for mortgages to peasant farmers. As the centralized Habsburg state developed, the concerns of higher-order property holders focused on management incentives for their lienholders and appropriate sanctions under the concept of emphyteusis. Emphyteusis is an explicit legal concept in Austrian property law stating that a lien or mortgage holder can repossess a property if its value has been significantly decreased by the owner.<sup>26</sup> Since the sixteenth century, it has been applied in the context of the rural estates of nobility and of individual family farmsteads. Thus, while large hereditary Estate properties of the Habsburg nobility could be repossessed by the Crown or state as lienholder of the estate, at the village level hereditary farmsteads that were part of these larger estates were repossessed by estate owners if the value of the farmstead had diminished since title last changed hands.

The historical movement to keep property intact – approximating impartibility – was thus an outcome of a convergence of interests between the Ständ of farmers and the Estates of their overlords, on the one hand, and those of lords and rulers, on the other. The sharp distinction between heirs and non-heirs was an outgrowth of this movement. This did not mean that farm families could not give some farmlands away as quitclaims, or sell off parcels, but that the farmsteads would have to be reconstructed in each generation, most commonly by marriage strategies, but also by purchase where land or farmsteads became available.

While lienholder/mortgagee relations were usually between members of different Ständ within the noble Estates, what is most distinct about the Austrian status groups and contemporary social classes is the peculiar degree to which social relations within the different Stand-levels of estates regulated certain economic relationships such as the sale of land. Here, propertied marriages were an instrument of class formation, and the social network constituting the propertied class exerted pressure to regulate marriage and the uses to which property was put. In Feistritz as elsewhere in Austria, we find such supervisory interests in continuance from the middle ages of “incorporated communes who partially controlled an individual’s or a family’s accession to incumbency as tenant-owner and wholly supervised the proper uses to which farms could be put.”<sup>27</sup> In Feistritz, the Nachbarschaft continued, down

to the present, to regulate the qualifications for principal heirs to exert their rights of ownership, even in terms of the ethnicity and farming experience of spouses. Feistritz and surrounding farm villages, historically Slovenian speaking, used the continuation of such institutions up through the 1970s to keep productive farms out of the hands of the surrounding townspeople, who, like the Estate owners (such as at Wasserleonburg), were predominantly German-speaking.

Sale of property was permitted under Austrian laws even before the first evidence for inheritance rights for farmers in Feistritz surfaces in the early 1500s. Farmstead owners had the right to sell their mortgageholding position, for example, to which title was secure so long as the farmstead did not run down in value. When the requirements of emphyteusis were violated, the landlord had the right to dispossess and sell the land to another party. Sale, however, was typically within the farmer class. Legitimacy of the sale and rights of the buyer, and use rights subsequent to purchase were regulated by the Nachbarschaft. Sales of farmsteads were few in the recent memory culture period, however, and extremely rare to outsiders (non-Slovenians, non-farmers, or outsiders to the farmer networks of the valley). Within these constraints, however, the purchase of farmsteads by insiders is an expression of a successful strategy of wealth accumulation, the precondition of such purchases.

Figure 1 tracks the ancestries of buyers through the Feistritz genealogical networks. Open circles, including all the points at the lower edge of the figure (the later generations), indicate farmsteads that were purchased. As lines move up the graph from the lowermost points, they connect the farmstead buyers to households in which they have ancestors in the village. Points (couples) are labeled by house-number: the vertical columns are households (hence the numbering on the graph is uniform for a vertical column – a single household, successively occupied), so that a vertical line is a downward succession between generations in the same household, and diagonal lines indicate a change of post-marital residence between generations, which is always the case for buyers. Columns are ordered left to right simply to keep linked households close together. Lines of ancestry through males are shown as solid lines, and those through females as dotted lines: ancestries move back in time as we move up the graph from the buyer couples at the bottom. When an upward line of ancestry ends, it means we have no more information, or no more ancestors within the village. A vertical scale by decade is shown to the right running in 30-year intervals for decade of marriage or first child, from 1540 to 1960. The large black dots represent



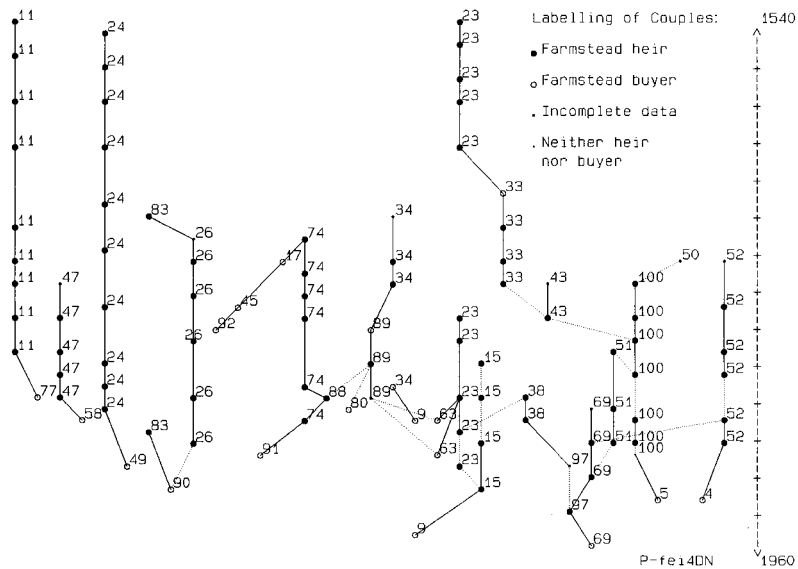


Figure 1. Feistritz farmstead buyer ancestries.

couples who have inherited a farmstead and its associated household.

Small black dots represent incomplete data to judge whether a household was inherited or purchased; one tiny dot is neither an heir nor a buyer.

There are four dominant patterns in the graph. (1) A majority of household succession is through inheritance by sons (as shown by the large black dots connected by solid vertical lines, with a total of 58 such lines), with about 10 percent of farmstead inheritance by females (seven dotted lines between large dots in the vertical columns). (2) Daughters more typically move from their household of origin to their husband's household. This is shown by the thirteen dotted diagonal lines, as opposed to seven dotted vertical ones (the fact that ancestries of the wives are not shown for many of the buyer couples indicates they were unknown or did not come from within the village, so it is also implied, for many of the cases where we do not see the origin of the wife, that they will have come from another household outside the village). (3) Purchase of farmsteads for sons is common (consulting the household records, this is the case for 12 of the solid diagonal lines that connect downward to buyer

couples) while purchase for daughters is rare (one case only of a dotted diagonal line connecting downward to a buyer couple). (4) In the twelve cases where farmsteads are purchased for sons, it is always the case that there is another son who was the principal heir to the family household and farmstead.<sup>28</sup>

Many of these lines of farmstead-buyer ancestries connect to common ancestors, but there is no relinking among the families in these ancestral forests other than the buyer husband of farmstead 63, after his wife dies, marrying her sister. In light of our emphasis on the possible connection between relinking – structural endogamy – and social class, this fact seems curious. The buyer couples, however, do not constitute a separate class. We must jump ahead for a moment to note that there is structural endogamy – indeed, a single reconnected block of couples, as we see in a later diagram – in the village as a whole, and that 40 percent of the buyer couples connect to ancestors in this block. Further, other than those who have no ancestors in the village, there are no buyer couples lacking ancestors in the major block of relinking. The breakdown of buyer couples in relation to the structurally endogamous block is:

- 9 buyer couples (31 percent) who are relinked in the structurally endogamous block;
- 4 buyer couples not in the reconnected block but with ancestors in the reconnected block;
- 16 buyer couples (farmers from nearby villages) with no village relatives but for other buyers.

The last set of 16 buyer couples, however, are linked to ancestors in the larger reconnected block that runs through all the farming villages in the region. Thus, buyers are sometimes directly but more often indirectly connected to blocks relinking the region, and more often than not come from outside the village, from a similar and relinked farm village.

Of the 19 buyer couples in Figure 1 (five of whom are ancestors of other buyers), all 14 who have an extensive number of ancestors from Feistritz also have a line of direct ancestors (beginning with parents) who are farmstead heirs (large dots); 3 of the remaining five have parents who were buyers (open circles). Although there are many non-heir and non-buyer couples in the village, only one appears on this graph of the ancestries of buyers (the parents of the buyers of household 5)! It is safe to assume that the ancestors of homestead buyers are quite wealthy by local standards. Although the figure does not show those buyer couples who came from outside the village, they tend to be wealthy too.

Given that buyers' families are usually substantially wealthier than non-buyers, what their relative wealth provides is only a partial escape from the marriage constraints of their social class: they must still qualify for farm-buyer status by links through their ancestors to the structurally endogamous group of farmers in the region, but they need not themselves follow the pattern of matrimonial re-linking. This may well be because with their accumulated wealth, they do not have reduced properties that need to be reassembled through quitclaims brought in by spouses. There is thus no need to marry within the village or its relinked social orbits, and they are free to take a wife from outside the village, perhaps a woman of higher social standing who will help to secure the children's education and access to urban occupations.

Ancestries of the buyers of farmsteads 77, 58, 49, and 90 on the left of the figure do not connect to those of other buyers.<sup>29</sup> Among the remaining buyer couples, however, there is one very large connected forest of multiple ancestral trees – all the rest of the buyer couples are kinship linked either by blood or affinal links, although sometimes very distant ones. The fact that buyers within the village are often interconnected suggests wealth transmission along kinship lines and colonization of additional households through purchase. If we include the fact that one of the outside buyers (of farmstead 34), from the regional farming center of Arnoldstein, passes along sufficient wealth for his son to purchase 5 additional houses (9, 32, 66, 90, and 93),<sup>30</sup> then 15 percent (13) of the 89 farmstead stemlines in Figure 1 end up colonizing a total of roughly 36 households, or 40 percent of the village farmsteads. There is also a pattern of lower-village households (23, 24, 26, 33, 34, 38, 43, 45, 50, 51, 52, 58, 69, 89, 97, 100) dominating the large linked forest to the right of Figure 1 and marrying their daughters to both the lower and upper village, while the upper village tends to colonize only in their own locale and not to marry daughters to other wealthy family lines, which may reflect their closer marriage alliances with the neighboring villages of Achomitz and Vorderberg. The lower versus upper spatial patterning of buyer ancestries suggests different spatially-based alliances by wealthy farm families at each end of the village.

Wealthier families have greater options inside and outside the village, including the possibilities of purchase of additional farmsteads or of educational attainment and out-migration. Their increased levels of wealth allow them to engage in a dynamic of farm purchase in which the market is a means of near-equilibration of the disparities in farmstead management. The market is also a means of cyclical or progressive

transformation or wealth accumulation. But while wealthier families may buy farmsteads, they are often reluctant to sell. Indeed, some of the empty houses in the village are mute testimony to wealthier families that simply abandoned (unlike those who sold) their houses, and moved to the cities to take up new professions.

In summary, the farm buyers are devoid amongst themselves of matrimonial re-linking, and only 31 percent are maritally relinked with other farming families, as opposed to a 60 percent rate of relinking among farmstead heirs. Yet they are descendants of the structurally endogamous families within the farming valley; their ancestors were heirs of other farmsteads in previous generations. They are a part-class within a larger set of farmstead heirs and buyers. Their marriage strategies, however, follow a separate logic, more akin to that of disembodied capital.

### Farming and game theory

Games, following Von Neumann and Morgenstern, are a special form of symbolic exchange – the basis of the concrete economy – whose aim is to establish maximal differential values from statistical regularities. Several games are occurring in the farming village. One is the differential placement of children, descendants, or family members in secure positions, both within the village and outside. Heirship, marriage to heirs, purchase of farmsteads, and the provisioning of out-migrants are alternative strategies in this game. Strategic success is measured sociobiologically in differential survivorship of descendants. A relevant measure of a couple's success within the village is its genetic colonization in subsequent generations in the farmsteads.

Before we turn to analyzing the networks of farmstead heirs as compared to buyers, we can use the measure of genetic colonization to ask: are there two games in town, with more highly capitalized farm buyers dominating the rest, or one? Figure 2 shows the rank order distribution of scores of ancestral couples in terms of presumed genetic contributions to descendants who remain in household 1-100. The highest observed score of 19.7 (for an ancestral couple in household 65 generation 12 who placed six of their children in village households, four leaving descendants), is a weighted ancestral contribution to offspring in the farmstead network. To compute this index, children are given full weight, grandchildren weighted by 1/2, great-grandchildren by 1/4, and so forth. One

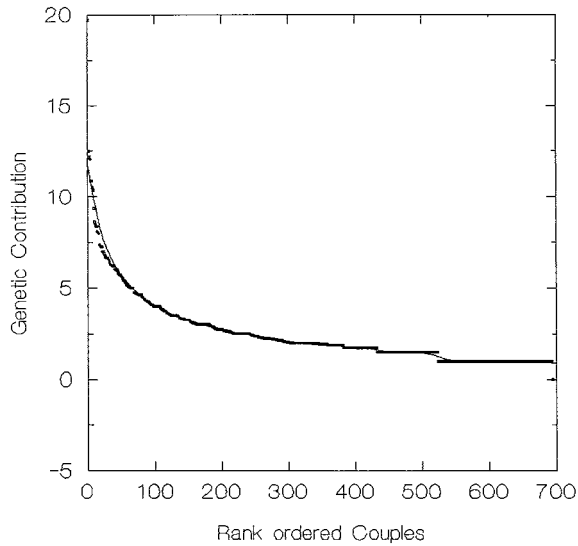
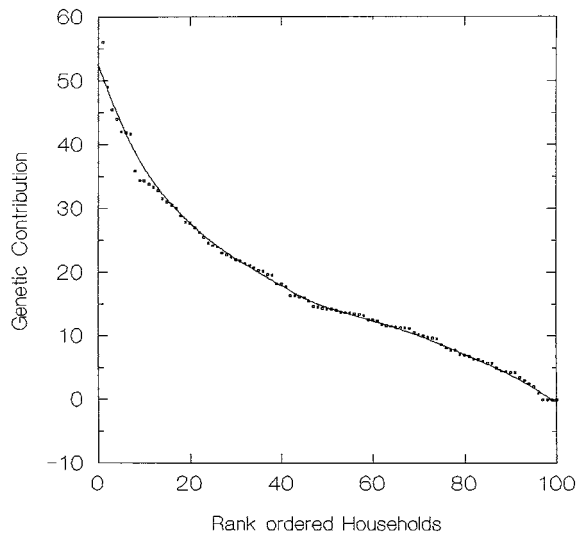


Figure 2. Ancestral distribution.

couple has the equivalent of 20 offspring, 7 of 10-13, 35 others of 6 or more, and 137 others of 3 or more (the decay of genetic contribution is a negative exponential function of rank, but a considerably slower decay than the Zipfian, because the couples are not independent and related couples are relatively more common among the higher ranks).

Figure 3 aggregates by household the distribution of couples in Figure 2 to show how genetic contributions are concentrated in influential households. While households are not labeled in this graph, household h33 is the top point and leaves 56 offspring equivalents; h23 leaves 49; h65 leaves 45; h37, 44; h18-h24-h40 leave 42; h71 leaves 36; h51-h52-h72 leave 34; and so forth. More influential households are located in the lower village and more toward the north and easterly side of the village, toward the central farmstead circle or commercial area. This parallels the clustering of lower village marriage alliances that we saw with the buyer families. Five of the top 11 households in ancestral dominance are, in fact, found in our buyer-ancestry households in Figure 1. The results in Figures 2 and 3, however, do not suggest that there are “two games in town.” Figure 3 has a surprisingly linear distribution of household-colonization inequalities with an only slightly more differentiated set at the top of elite households, some of which are buyer families, but their differences from the linear array do not constitute a major discontinuity.



**Figure 3. Ancestral household distribution.**

Examination of the buyers' market for farmsteads and the ancestries of buyers also suggests that the game of survivorship is not played purely in terms of economic maximization, in which case sellers would seek the highest bidders, including outsiders (sale to outsiders rarely happens, and almost always occurs through bankruptcy and repossession of assets by banks, who often sell back to wealthier farming families). Instead, several alternatives of the sociobiological game seem to be played or traded off against one another in the market for farmsteads.<sup>31</sup>

Viewing both purchase and marriage as ways of settling descendants with farmsteads, one may settle descendants with assets in farmsteads in the village or region, settle descendants with crafts or professions in the village, or settle descendants with skills or professions for city life as outmigrants.

### Inheritance of village farmsteads<sup>32</sup>

Under the twin doctrines of impartibility and emphyteusis, farm families in the two villages that grew into today's village of Feistritz and took or were given hereditary title to undivided farmsteads by 1527 (the date of the first farmstead survey conducted by Estate owners), possibly earlier. By this date the Habsburg lords of nearby Wasserleonburg had mismanaged their estates and been ejected by the Crown under Maximilian I. The wealthy Burger family of Wilhelm Neumann that took

over ownership and administration of these estates continued to collect rents, tithes, and services from peasants using the land, and may have been the first to institute hereditary rights for single heirs to constituent farmsteads so long as the heir kept the value of the holdings intact.

In the Gail valley, however, as throughout Austria, traditional intestate (lacking a written will) inheritance rights to a portion of the parent's estate also had to be satisfied for each legitimate child.<sup>33</sup> The value of the estate was divided (e.g., half and half) into the main portion of the primary heir and a residual portion whose value was to be split among other children who would thereby quit their claim to the principal portion. If the children insisted on splitting the productive property of the main portion, thereby reducing its value, the entire holdings of the deceased parents could be repossessed by the estate owners and given to another couple. Hence, secondary heirs typically accepted their quitclaims and either took up farm labor or crafts in the village, or departed to work in town or city. Or, if a child were to marry an heir of another farmstead, it would pay the parents to provide dowry or dower to this child sufficient to secure the emphyteusis of the heirship of the child's spouse. There was then an incentive for a certain amount of wealth-distribution in the dowry of one's children, as opposed to risks of property diminution and dispossession, but there were also opportunities for property accumulation as owners die and others leave. Thus, many of the Feistritz quitclaims are paid in land, and the circulation of land is of great concern to heirs and their families, who often count on a marriage that will bring needed pieces of land back to the main farmstead unit. Feistritz has nothing like the strictly impartible inheritance system such as Bourdieu described for the French Pyrenees,<sup>34</sup> where quitclaims (dowries) were paid strictly in cash.

#### Graphs of farmstead ownership and genealogy<sup>35</sup>

Figure 4 is a visual cross-tabulation of data on married couples showing their household of post-marital residence (1-100, by house number) by their date of marriage, which run in decades from 1500 to 1980. Large black circles, which predominate throughout, are heirships (as opposed to non-heirs or missing data) known either through a son or daughter. Only in a few cases prior to the 1800s do we know about heirships through daughters, however. Smaller dark circles are ambiguous cases where ownership of a farmstead shifts to a couple with a few family name, but we do not know whether a daughter has inherited and the

new name is that of the son-in-law, or whether someone has bought the property, or the old owner has been evicted and the property sold or given to someone new. We can only make inferential reconstructions of paternal kinship between families in different households, as when we assume that a new name such as Johann Schmidt in house 40 in 1750 represents the son of Jakob Schmidt in house 36 in 1715. Open circles represent purchases, mostly known about only after 1800, but still infrequent compared to heirships. Finally, the minuscule dots represent couples who did not own but did remain living in farmsteads after marriage, presumably taking farm work, crafts, dependent positions, or helping their main heir. Few of these minuscule dots are found before 1850 since we only know about them through memory culture. The households interviewed for memory culture data are marked 'hse.' before their street numbers on the left margin of the Figures. After 1850, some of the small dots are obscured under the larger dots when more than one couple living in a farmstead married in the same decade. Most of those in the category of non-heirs, however, left the village; or sometimes they moved to the non-farmstead residences (numbered in the range 101-154, and not shown in the Figures) in the village.

Recall what we are looking at in the graph of Figure 4: the intersection of the biography of a locally named individual farmstead property (a Stammhaus: usually named after the first family granted hereditary rights, e.g., in 1527), through time, with residents or owners who have their own intersecting social biographies connecting household to household. In the next and later graphs we make these latter intersections explicit.

The previous graph is enriched in Figure 5 by adding what we know about heirships within household family stem-lines. Here dark lines represent sons as heirs connecting their parents' marriages with their own occupancies, and dotted lines represent the same for daughters when they inherit in the absence of male heirs. What is remarkable about Figure 5 is how many very long sequences there are of stem family farmstead inheritance. Second, in the period after 1850 (and probably before, although relevant data are missing), about 25 percent of the heirships are through females.<sup>36</sup> Third, a majority of purchases are subsequently passed on through inheritance.

There are at least 30 "times gaps" in Figure 5 that are particularly intriguing because a large black "inheritance" dot is followed by another after an interval of time with no connecting descendant. Usually these



indicate that an owner couple has died without issue, or with a child too young to inherit, that the next heir is a collateral who does not take up residence in the household; the following heir inherits from them and does take up residence. A parallel but less common scenario occurs when heirship passes to a couple who inherit two houses – one through the husband, one through the wife, for example – one of which they do not occupy, but do eventually pass to an heir who resides there. In both cases there is an intervening family link outside the household that is missing on the graph.

We could imagine an overlay of the complete network of genealogical relationships onto Figure 4 and 5 connecting each couple through a dotted line to parents of the wife, and through a solid line to parents of the husband. The densest part of the network would be during the period of memory culture, 1850-1960. Such a figure is overly dense for visual inspection,<sup>37</sup> so we only show the subset of kinships between couples who are relinked.

Figure 6 illustrates the concept of relinking for a subset of couples in households 1-100 who are involved in direct relinking between two families, descendants of common ancestors within three generation's reach. These are strong relinkings, known to each family involved. Each couple involved in these strong relinkings is shown as a point on the graph, and each such point is connected by kinship links to at least two other points also on the graph. Further, within blocks, all such points are independently linked by two or more separate paths that thus form circuits within the block.<sup>38</sup> Five blocks of strong relinkings are shown, with two blocks in the middle sharing a couple. Couples are labeled according to their farmstead of residence. In block A, families descending from farmsteads 38 and 47 are relinked.<sup>39</sup> In B, families descending from 37 and 51 are relinked in 69 and 57, and descendants from 37 and 48 are relinked, overlapping to form a single block. In C, families descending from 100 and 42 are relinked through 55 and 42a, while a child of the latter marriage relinks families from 35 and 18. In terms of our definition of blocks the whole graph is a single block in a weak sense, but the circuits formed by the 55-42a and 42b-35 relinkings share more than one point, so they form a strong circuit-block. This block has only a single point in common (in graph theory: a cut point or point of articulation between blocks) with block D, in which families descending from 18 and 83 relink through marriages in 89 and 83. The last block, E, to the right, is very complex. Two marriages in household 60 relink; so do two in 64, and two in 85, and one of these in 85 with a couple in 33.

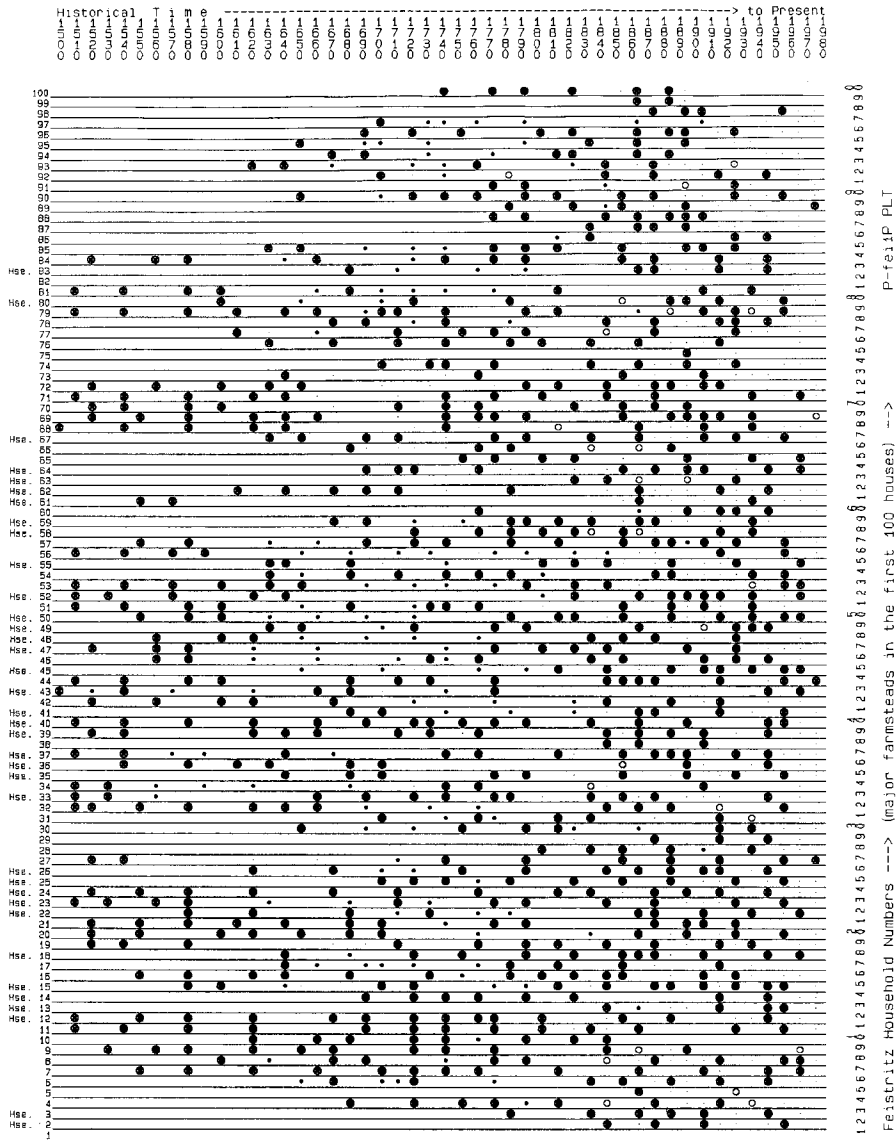


Figure 4. Types of couples in numbered household (rows) ordered by decades (cols).

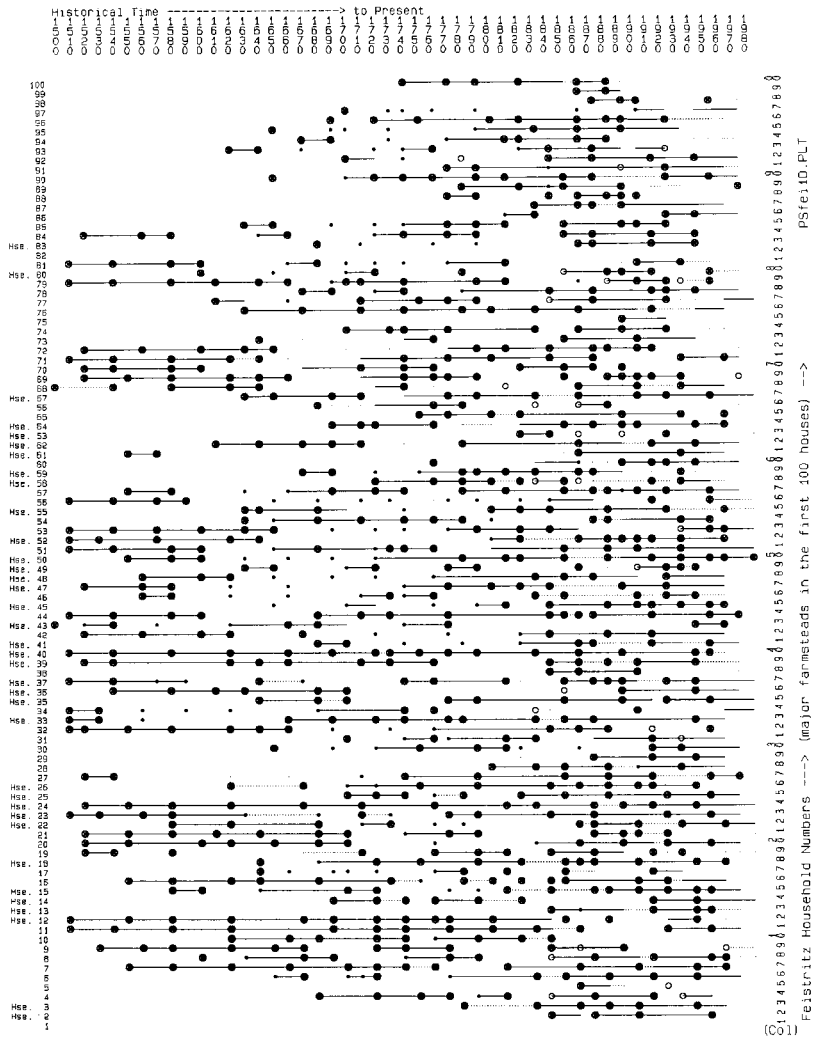


Figure 5. Inheritance by couples in numbered households (row) ordered by decades (col).

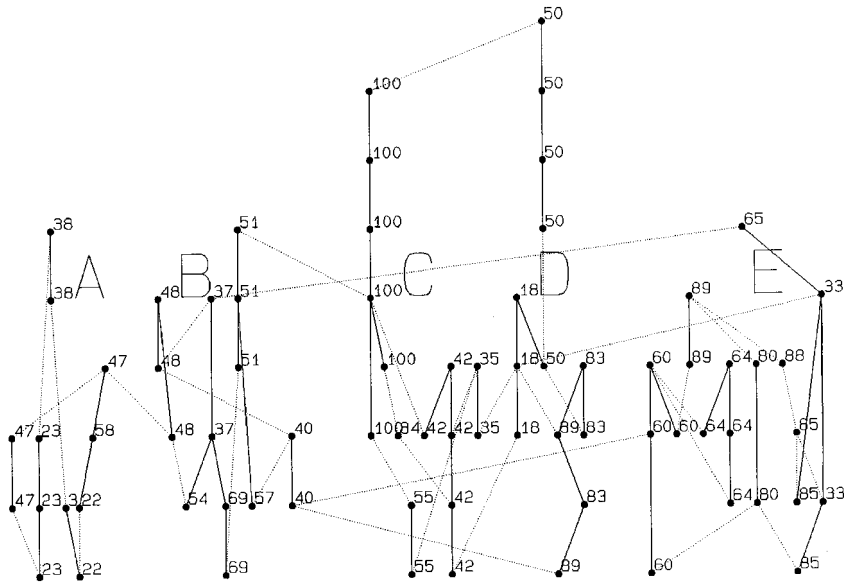


Figure 6. Two-family relinkings in Feistritz.

Their relinking circuits overlap to form a single block. Also within this block is the circuit of a blood marriage: a husband in household 85 marries his mother's second cousin, a girl of his age. Block E also illustrates the complex patterns by which relinking provides access to resources. The husband who marries his mother's cousin, for example, grows up in 33 but inherits household 85 from his mother although her sister and sister's husband were living there (they had no children and retired): while not a direct heir, the claim of the younger man is triply strong since he is the nephew of both the resident sister and her husband, in addition to the marriage to the sister's cousin. While this man was not a primary heir to his own household and was only a millworker, his surfeit of kinship connections through the "heirless" household/ farmstead 85 insured him an inheritance there. Note that all the couples in this graph are heirs to farmsteads.

Other lines outside these blocks of strong relinking are shown to exemplify how indirect relinkings (between three or more families) or those involving more distant relatives (at four or more generations removed from a common ancestor) create weaker relinkings that connect three of the four blocks into larger circuits. Ultimately, when two or more families are at least weakly relinked, all these circuits link up to form one large block of structural endogamy.

Figure 6 also displays the idea of the network duality between the biographies of individuals and that of properties (farmsteads) expressed at the end of our introductory paragraphs. Here, the biographies of individual named farmsteads descend linearly through time (keeping their identities by household numbers) to intersect in each generation with the biographies of individual persons who themselves have ancestries. The lines zigzag diagonally when succeeding generations shift residence (as children move in each generation from their parents' household to their post-marital residence). Where a property stays with an heir, their joint movement is represented by a vertical line (solid for sons, dotted for females). An intersection of the homestead with a couple is marked by a large black dot when one of them is the heir.

(One minor clarification: for some couples, one or both sets of parents are not known or come from outside the village, so not every couple will have two parental couples within the village.)

There are a great variety of ways by which property fragmented from one farmstead is reunited with another through relinking marriages. The first pair of marriages on the left of Figure 6, for example, is quite typical as regards inheritance: the bride joining farmstead 23 gets a quitclaim from 47 where her brother inherits, while in farmstead 22 the daughter inherits in the absence of brothers, and her husband from household 3, where his brother inherits, brings family resources in the bakery business to the marriage. Since two bilateral kindreds are linked and relinked in the same generation by these marriages, the process is one of wealth consolidation. Moving to the interior of the cluster of marriages in the middle of Figure 6, the relinking marriage in farmstead 42 illustrates reactivation of a link established between two families in the previous generation. While the husband inherits, his mother and wife's mother get extensive quitclaims from a wealthy family linked to the big sawmill at the boundary with the next village, and his wife gets resources from her father, heir to two houses later split among her brothers.

Relinking might be thought to weaken more intermediate links and families involved in the marriage circuits. Figure 6 shows only the stronger relinkings with two or more families, and within three generations to a common ancestor. Indeed, one-third of the farmsteads in Figure 6 are among the sociobiologically "dominant" households in Figure 3, as opposed to a base rate of one-sixth of the farmsteads who are "dominant" but do not have direct relinkings and are not included in Figure 6. Indirect relinkings are not only more numerous, however, but may be just as important from a standpoint of overall tendencies toward

structural endogamy and the reconsolidation of wealth, even if they are less salient to the actors or families involved.

### **Test of hypothesis relating heirship to structural endogamy and social class membership**

If we use a standard measure of endogamy to test the notion that heirs constitute an endogamous social class, as noted earlier, a well-formulated relationship would be that heirs tend to marry the children of heirs, and heirs are linked by such marriages into a social class. Table 1 tests this relationship for the period 1860-1960. The observed (Pearson) correlation accounts for only 2 percent of the  $r^2$  variance in heirship. Standard endogamy is therefore rejected as a predictor of heirship.

What is needed to test our main hypothesis is an analysis of the network of matrimonial relinking. Relinking constitutes those blocks of marriages we call structurally endogamous. Not every structurally endogamous couple needs to marry endogamously within its block(s), as exemplified in Figure 6, but every such couple will either be (1) an ancestor to two or more individual members of endogamous couples, (2) a lineal link between a linking ancestor and an endogamous couple, or (3) an endogamous couple. Couples of types (1) and (2) may split or transmit property through lineal inheritance, while couples of type (3) may reconsolidate such lines of divergent transmission. It is for this reason that structural endogamy – or blocks of relinking – are natural units for social class formation and for property consolidation within a social class. Clearly, we expect the hypothesis of an association between structural endogamy and heirship to work much better than the hypothesis linking heirship with attribute-based endogamy.

Figure 7 depicts the type of network structure we use to test our hypothesis about the formation of a distinct social class of principal heirs within the village. A total of 234 couples are involved in relinking among households 1-100. Figure 7 contains all and only the marriage relinkings between families in these households. A computer analysis of data in this figure shows there to be only one comprehensive block of relinkings here, containing 234 of the 245 couples, and three very small blocks each containing only 3 or 4 couples.

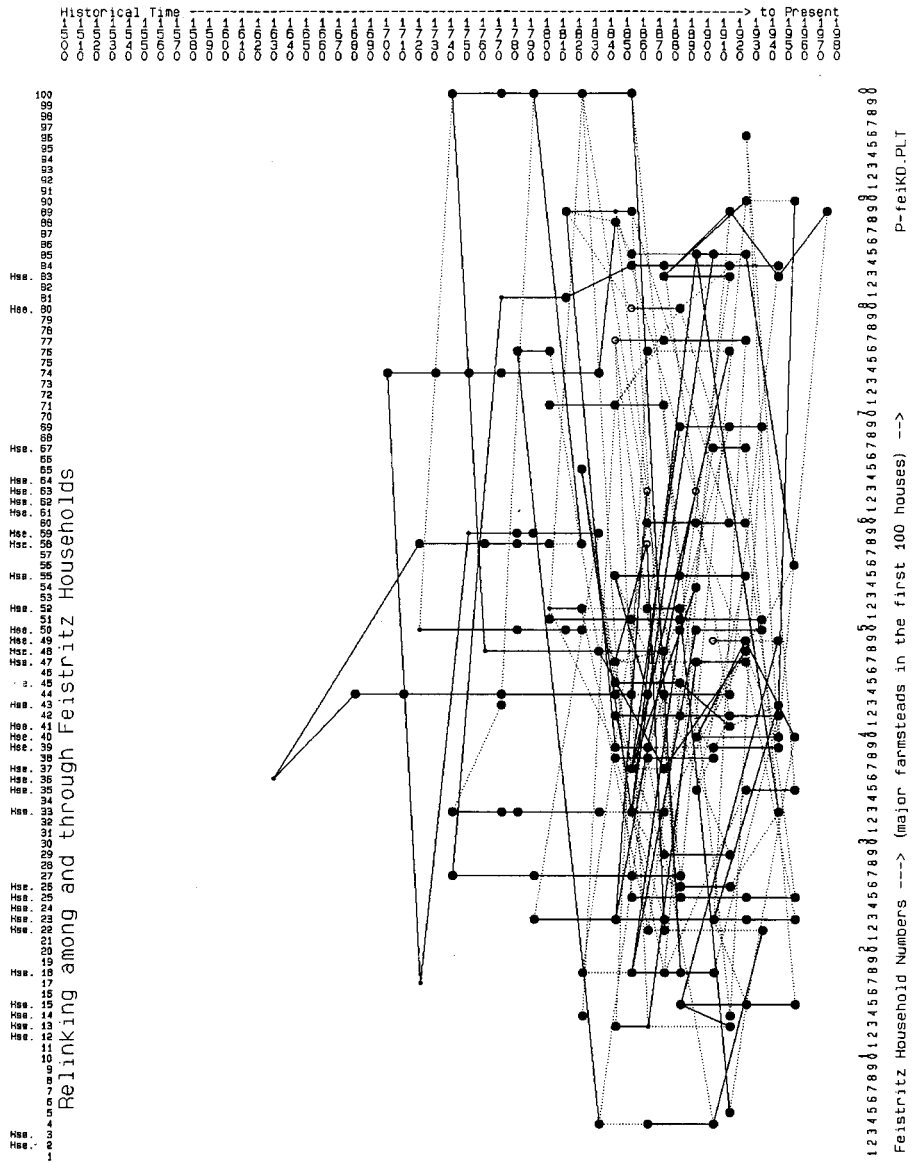


Figure 7. The relinked block of Feistritz kin ordered by decades.

*Table 1.* Association of simple endogamy with heirship (Pearson's  $r = 0.15$ ).

| 1860-1960s      | Children of heirs | Children of non-heirs | Totals      |
|-----------------|-------------------|-----------------------|-------------|
| Heirs marry     | 47 (10%)          | 438 (90%)             | 485         |
| Non-heirs marry | 26 (3%)           | 881 (97%)             | 907         |
| <i>Totals</i>   | <i>73 (5%)</i>    | <i>1319 (95%)</i>     | <i>1392</i> |

Since this is a graph of relinking, we see many instances where a son (dark line) inherits the farmstead, and his wife comes from another farmstead in the village, presumably bringing a dowry in land. In about 25 percent of the cases of relinking we see the reverse, where the daughter inherits and the son-in-law may bring a dower of land from another farmstead. If a structurally endogamous class of farm owners were constituted by such marriages, the large black dots (heirship couples) in this graph would constitute – in the decades of memory culture in Figures 4 to 6 – a substantial fraction of the total set of heirship couples. In fact, this fraction is substantial (nearly 40 percent), four times that in Table 1. The hypothesis that a high proportion of the heirship couples are connected by relinking within the intra-village block of relinkings, thereby forming a structurally endogamous social class, is moderately supported. The block of farmstead families involved in relinking within the village is not the largest unit of farm-heir structural endogamy, however. Farm heirs of Feistritz also intermarry with the farmers of Achomitz, immediately alongside them, and with other farm villages such as Vorderberg, a neighboring village 3 miles up the valley and overlapping the same mountainous commons (alms) land.

To lesser degrees they marry and relink to farm families in smaller but more distant villages in the larger valley ecosystem. When Feistritz informants list their relatives, they commonly give the names of those with whom they are intermarried in the network of neighboring villages.

From these memory culture data, it is possible to construct the maximal relinking blocks in the network. There is, in fact, only one large block of relinkings in the Feistritz kinship and intermarriage network.

Indeed, in the block of relinkings within the regional network in which the farmers tend to marry, the fraction of heirs is much more substantial.

The hypothesis of expected association between heirships and blocks of relinked couples in the region is tested in Table 2, and supported by a strong positive association ( $r = 0.54$  versus non-heirs, 30%  $r^2$  co-variance,  $p = 0.000000001$ ). Since 60 percent of the households were not directly interviewed (thus missing some relinking data) but heirship



*Table 2.* Association of structural endogamy (relinking blocks) with heirship ( $r = 0.54$ )

| 1860-1960s<br>Blocks of re-<br>linkings | In block(s)      | Outside<br>block(s) | Totals     |
|---|------------------|---------------------|------------|
| Heirs                                   | 173 (60%)        | 117<br>(40%)        | 290        |
| Buyers                                  | 9 (31%)          | 20<br>(61%)         | 29         |
| Residents                               | 25 (8%)          | 281<br>(92%)        | 306        |
| <i>Totals</i>                           | <i>207 (33%)</i> | <i>418 (67%)</i>    | <i>625</i> |
| % Heirs<br>and buyers                   | 88%              | 33%                 | 51%        |

data were more widely available, the true association is undoubtedly much higher.

How is social class constituted in terms of the types of couples in Table 2? Clearly, the heirs and buyers who are more structurally endogamous (the buyers less so) constitute a distinct class from residents who are not structurally endogamous. Due to gaps in the data collection, we have probably underestimated the number of heirs who are structurally endogamous, but those who remain outside, like the buyers, may attain higher class status through inheritance from ancestors who were structurally endogamous, whereas this is not the case for most of the resident non-heirs. Class membership – in terms of similar access to resources – should be a composite of qualifying property ownership and membership criteria deriving from inheritance and marriage that give rights to the productive use of such property. The few ( $n = 25$ ) resident couples in Table 2 who are structurally endogamous but not property owners may share with the farmer class only the prospect of higher marriages for their children, or they may indeed be resident with children who have become heirs through relinked marriages.

Since Table 2 presents the main data currently available to test the hypothesis, some commentary is needed in relation to those same data as presented in graphic form. Columns for heirs, buyers, and residents in the table correspond to large, open, and miniscule dots in graphs 4, 5, and 6. Missing data for heirship versus buyer status (medium-sized dots) are not included in Table 2. One is surprised, however, by the large number of residents tabulated in Table 2 who were not shown in the figures. This is because the residents, as smaller dots, are typically obscured in the figures by the larger dots or the lines within their households. Work remains to be done in refining this table to eliminate those heirs for whom we have insufficient genealogical data on which to judge

inclusion in the block of relinkings. It is assumed that the number of current exceptions to the hypothesis (117) would be greatly reduced if this were done.

### Social change and the larger social field

Specific names (Galle, Glantschnig, Kuglitsch, Leiler, Malle, Millonig, Pipp, Schnabl, and descendants Druml, Godec, Mortl, and Wiegele) have been prominent in the village over long periods of time. Many such families were gradually being replaced by new and up-and-coming families whose strategy was also that of linkage and relinkage. Two world wars and the loss of young men in the village also facilitated this type of replacement.

In Table 3 the number of heirs in each decade is compared to the total number of heirs in each decade in the relinked blocks of the village – shown in Figure 7 – and of the total region. The percentage of heirs in the village block (Figure 7) of relinkings averages 37 percent; that within the inter-village block of relinkings averages 60 percent. Heirship rates in the village and total blocks of relinked couples are relatively constant up to about 1950, but dip in the depression era (1930s) and in the recent decades of the 1950s and 1960s. The rate of network endogamy (both

*Table 3.* Relinking and endogamy percentage by decade.

|               | Heirs in blocks |                 | Total heirs | Percent for    |                 | Endogamy   |
|---------------|-----------------|-----------------|-------------|----------------|-----------------|------------|
|               | Village Blocks  | Regional Blocks |             | Village Blocks | Regional Blocks |            |
| 1860          | 13              | 19              | 31          | 42%            | 61%             | 44%        |
| 1870          | 13              | 18              | 32          | 41%            | 56%             | 42%        |
| 1880          | 13              | 20              | 28          | 46%            | 71%             | 51%        |
| 1800          | 8               | 18              | 25          | 32%            | 72%             | 49%        |
| 1900          | 9               | 17              | 28          | 32%            | 61%             | 42%        |
| 1910          | 15              | 25              | 31          | 48%            | 81%             | 37%        |
| 1920          | 15              | 21              | 27          | 56%            | 78%             | 33%        |
| 1930          | 4*              | 6*              | 18          | 22%            | 33%             | 43%        |
| 1940          | 10              | 18              | 27          | 37%            | 67%             | 44%        |
| 1950          | 8               | 10              | 25          | 32%            | 40%             | 42%        |
| 1960          | 0               | 1               | 13          | 0%             | 8%              | 42%        |
| <i>Totals</i> | <i>108</i>      | <i>173</i>      | <i>290</i>  | <i>37%</i>     | <i>60%</i>      | <i>45%</i> |

parents from within the network over one or both parents known), in contrast, is fairly constant throughout, as shown in the last column of the table.

After the 1950s, higher levels of education oriented village people toward the national society, away from the local prestige system of the farmers, and toward prestige judgments in more urban terms. Local farmstead girls no longer wanted to marry farmers. Farm heirs, even by the 1960s, had to go far afield into remote villages in the valley to find suitable wives. Starting in the 1970s, a greater number of farmsteads become available for purchase as more heirs decided to emigrate, and the remaining heirs were less obligated to marry locally in order to get land. By the 1990s even the girls in remote villages would also spurn marriage with Feistritz heirs, even though the law changed, and wives acquired half the farm at marriage as community property. The farm men increasingly tend to marry outsiders, often women from Italy or Slovenia or waitresses working nearby, seeking to improve their prospects.

Several further questions about social change are raised by the study of relinking as a component of social class:

1. How long does it take for this type of social class to be constituted? That is, starting in any given generation, how long does it take for a structure of re-linked families to emerge, and how rapidly does the number of re-linked couples grow as a function of additional generations?
2. Within each generation, what is the structure of marriages? Is it similar to a random distribution of marriages given the marriage cohort within the community? Is there additional internal structure of marriages within the boundaries of the community, or within the structurally endogamous group? How does the structure of marriages within generations contribute to relinking?

Table 4 shows data calculated from our genealogical networks that speak to these questions. For each generation in our genealogical data (going back a maximum of 12 generations before the latest), we have computed the number of couples involved in structural endogamy (there linked couples plus those involved in the relinking), varying the number of generations back to linking ancestors from 1, 2, 3, ... up to 12. The table presents the actual numbers of couples involved in structural endogamy (relinking) compared to simulated data in which the male

*Table 4. Comparison of relinking frequencies for actual and simulated data.*

| Starting from | Magnitude of structural endogamy with ancestors back 1, 2, ..., g generations |      |     |     |     |     |     |     |     |     |     |     |
|---------------|---|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Present       |   |      |     |     |     |     |     |     |     |     |     |     |
| generation    | 1   | 2    | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  |
| Actual        | 8*  | 16*  | 70* | 179 | 257 | 318 | 349 | 363 | 376 | 390 | 399 | 405 |
| Simulated     | 0   | 0    | 32  | 183 | 273 | 335 | 365 | 382 | 388 | 397 | 397 | 403 |
| Back one      |   |      |     |     |     |     |     |     |     |     |     |     |
| generation    | 1   | 2    | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  |     |
| Actual        | 8*  | 58*  | 168 | 246 | 308 | 339 | 353 | 366 | 380 | 389 | 395 |     |
| Simulated     | 0   | 18   | 168 | 255 | 320 | 347 | 366 | 372 | 381 | 381 | 387 |     |
| Back two      |   |      |     |     |     |     |     |     |     |     |     |     |
| generations   | 1   | 2    | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |     |     |
| Actual        | 26*   | 115* | 178 | 243 | 278 | 292 | 305 | 319 | 328 | 334 |     |     |
| Simulated     | 0   | 98   | 194 | 262 | 291 | 310 | 316 | 325 | 325 | 331 |     |     |

\* Greater than chance.

lines are kept constant but their couplings with females are permuted randomly in each generation.

What Table 4 shows is that the rates of relinking are much higher than expected by chance where the common ancestors are 2-3 generations back, thus likely to be living relatives. Our findings support the assumption of Richard<sup>40</sup> for two French villages, that relinking as a marital strategy occurs within a memory span of under 3-4 generations for linking ancestral relatives. His study also supports the type of result that we observe, in that marital relinking in the French villages is also found amongst farmers and not among other occupations in the same village.

The social network processes described here, of course, do not take place in isolation, operating only out of local practice and customary law. Networks are embedded in larger fields that set their changing boundary conditions, constraints, and external inputs and outputs (flows of resources and personnel). This interaction works two ways. Outflow over the last four centuries of migrants endowed with quitclaims and dowries, for example, from villages with "impartible" productive capital like Feistritz, helped to capitalize pools of skilled laborers, craftspeople, professionals, and entrepreneurs in the towns and cities that gave rise to the industrial revolution.<sup>41</sup> Conversely, the system of impartibility in Feistritz developed partly out of specific processes in the larger social field.<sup>42</sup> These multilevel and interactive historical processes, and instances

of points of rapid institutional change, however, are best considered in more detail as the subject for a separate study.

## Conclusion

We might presume, theoretically, with Bourdieu that the dynamics of social reproduction require an understanding of how the local and larger community are connected in the social-class formation process. Exchange theory, as formulated by Lévi-Strauss, did not make these connections, which we believe to be important for historical and ethnographic studies of human communities. Yet, Lévi-Strauss raised a number of questions that have only begun to be addressed comparatively<sup>43</sup> but are approached directly here through the use of the structural kinship diagrams. Some of these questions grow out of his conceptualization of exchange: what, for example, is the size and shape of the network by which kinship and marriage ties double back on themselves through relinking or *renchâinement*? We have formulated that question here in terms of the social units of structural endogamy, and added a number of questions as to the linkages among structural endogamy, property transmission, and class formation, questions that are raised by connections between them found in our case study and in reconceptualizing some problems associated with the concept of social class.

This study begins by focusing on the time scale of intermarriage shaping inheritance, wealth consolidation, and class formation in succeeding generations over several centuries, using genealogical and census data on concrete persons as units of interaction. Our graph theoretic approach offers not only more precision in dealing with detailed interactions than conventional statistical analyses, but helps us establish a radical reformulation of the social phenomena under study. It allows us to see the actual structure of social relations, and to identify their variant aspects at different points of time and under different historical conditions. A network is a social field in transformation where institutions, such as the specific morphology of class, emerge and are mediated by interlinked actions and strategies, and certain periods of equilibrium – as with the reconstitution of farmsteads by folding quitclaim land parcels back in through marriage – may oscillate in dynamic tension with rapid institutional change.

Matrimonial relinking is a generative criterion for the boundary conditions of structural endogamy in a population, and blocks of bilaterally

related families linked and relinked through marriage form the largest emergent units of structural endogamy in any population.<sup>44</sup> The character of structural endogamy is that divergent lines of collaterals in various families link and then reconverge again to unite families through self-reinforcing circuits of intermarriage. The consequence for property split up through devolving inheritance is that emergent units of structural endogamy are also those of potential reconsolidation of property. Hence, where the ownership of property is an important element of class position – in terms of access to resources – units of structural endogamy are natural units of class formation. This idea is implicit in much of the literature on marriage alliances, wealth consolidation, and class formation, but is nowhere explicitly defined in structural terms or examined as a structural constraint on the social processes involved.

Structural endogamy also demarcates lines of cleavage in a population, and segments siblings in the same family in terms of how their life courses differ. Our study of social networks constituting units of structural endogamy and defining the kinship channels for the devolution of property among farming families of the Gail Valley shows a single large block of overlapping circuits of re-linked families. Couples who are structurally endogamous within this large re-linkage network are multiply linked by a myriad of marriage circles, but the majority of individuals born in the village are not relinked so as satisfy structural endogamy through social circles of kinship and marriage that reconnect through multiple paths involving their parents, spouses, or children.

To contrast the utility of standard versus structural conceptions of endogamy, two hypotheses were tested. In the first we tested whether couples who inherited farmsteads married according to a standard categorical definition of endogamy, in this case, that of both spouses being the children of farmstead heirs in the previous generation. The correlation between standard endogamy and heirship was insignificant.

Next, we tested the main hypothesis that linked structural endogamy to class formation. We correlated the category of couples inheriting village farmsteads with membership in the structurally endogamous blocks of families linked and relinked by marriage. The explained covariance between these two variables was 30 percent and is likely to be significantly underestimated given missing data on kinship links for heirs in a substantial fraction of farmsteads.

The Gail valley farmers thus were found to have a strong emergent statistical property that links inheritance and occupational succession

to structurally endogamous marriages within a social class composed largely of farmstead owners. Farmstead buyers were also found to be descended from structurally endogamous families. Because membership in the unique block of relinkings found in this study is strongly correlated with heirship versus non-heirship, in conformity with our hypothesis, class formation in this village is inhomogeneous with respect to sibling sets. Propertied couples tend to combine the primary inheritance of an undivided farmstead that is necessarily reduced (by payment of quitclaims or dowry in land to siblings) with land brought to the marriage by the other spouse, which tends in turn to reconstitute the farmstead property. Marriages of non-heirs, on the other hand, largely fail to relink – at least in memory culture – with the structurally endogamous families of this farming valley, but are absorbed into the outside networks and classes associated with the places where non-heirs tend to migrate.

Structural endogamy is a type of homogamy, not in terms of similar characteristics but in terms of homologous relations. Relational homology, however, is very different from classifications based on attribute similarities. No readers should put this article aside with the idea that they can classify individuals in a given population into mutually exclusive groups based on structural endogamy. Based on the concept of blocks in graph theory, blocks on structural endogamy partition the relations in the graph into mutually exclusive sets. In our graphs of kinship and marriage networks, the relations are individuals, but individuals may be represented more than once if they are multiply married.

Thus, the marriages of the same individual may fall into different blocks, and the same marriage may fall into two or more blocks. Yet structural endogamy is a precise concept that identifies bounded social units,<sup>45</sup> even if they may overlap by sharing a common element, unlike the typical concept of social classes.

Whether the connection between relinking and property transmission may hold for other social classes in industrial societies remains to be researched in other times and regions. The study of relinking, however, implies a wholly different way of looking at social units in complex societies. It is not that we take a given group and measure its relative endogamy: rather, if we have extensive network data on kinship and matrimony, various levels of relinking may be specified (relinking by 1 through  $k$  alternate circuits, by 1 through  $n$  relinked families, by 1 through  $g$  generations) by which structurally endogamous groupings emerge from the analysis. The question is: do these emergent groupings

have statistical and social characteristics that link them to property transmission or to class formation? In this case study, we answer in the affirmative.

Taking couples in any given decade or generation as a reference point, strategies of relinking may differ in terms of how quickly blocks of relinked families are formed. In our data, significant relinkings occur within three generations, and are recurrent, but also cumulate into larger blocks over long generational spans. When we compared the speed of relinking with a random model, permuting spouses in each generation, we did find evidence of relinking strategies within 2-3 generations, linking through living ancestors or memory of those that people have known in their lifetimes. More distant levels of relinking, however, converged to that expected in the random baseline model.

In defining the networks of relinkings as graph-theoretic blocks of the kinship network, we also open the question as to whether men or women are more commonly found as links in these blocks, regardless of agnatic biases in inheritance of residence. Structural alliance concepts such as relinking (*renchâinement*), or our group-level reformulation as structural endogamy, are indifferent to the grouping principles that so distort our understanding of kinship as a network. Focusing on concrete individuals also helps to correct for the pervading andocentric bias so often discerned in ethnography and anthropological theory. Our concern with the reallocation of persons across social groups, for example, finds a more andocentric expression in Lévi-Strauss as the “exchange of women,” which for many reasons is not a correct diagnosis of matrimonial transactions. A network approach focuses even handedly on both men and women in terms of their kinship ties, inheritance, etc., and precludes choice of a “framework” of abstraction that might cast an andocentric bias over the treatment of gender roles. More basically, it allows us to take a more fine-grained approach to long-term social processes that occur in the flow of real historical time. If we are to study class processes as network phenomena, we need a certain amount of scientific visualization to mobilize and employ network concepts that can help us model complex data.

Lévi-Strauss<sup>46</sup> complained of the “apparent and impossible complexity” of kinship systems in writing of the “idea that kinship must be interpreted as structural phenomena.” Ironically, the tools for structural visualization we have utilized here (while made possible by the development of network studies in the past 25 years, of concepts such as



relinking in French village studies, and the framework for the dynamic structural analyses of kinship developed by White and Jorion and Houseman and White<sup>47</sup>) developed out of the embryonic diagrams used by Guilbaud to study Lévi-Straussian marriage rules. We have adapted and changed the use of such diagrams to represent concrete network representations, thereby making possible the direct treatment of kinship relations in terms of strategies and behaviors rather than ideal rules and abstracted models. Because these graphs can be seen from a sliding perspective through time, they have an implicit dynamic that links the “structured” behavior of marriage choices and reproductive outcomes in the past to the concept that elements of this past “structure” are also “structuring” for the future space of opportunities. Thus, the network approach returns to the theme of Bourdieu’s “structured and structuring structures,” but at the concrete level of social relations that differentially compose and condition the “habitus” of each individual.

Structural endogamy as a property of a relational system raises some fundamental questions about how social rules are constituted. Structural endogamy does not require that every marriage in a relinked block be endogamous. Farmstead buyers, for example, constitute a sub-class of farmers descended from the wealthier structurally endogamous families.

Not being dependent on marriage for reconstitution of their landholdings, their own marriages are less likely to be structurally endogamous. Their heirs, however, may relink them into the endogamous block. The Gail Valley farmers thus could be perfectly structurally endogamous while certain marriages to perfectly random “outsiders” (like many of the farmstead buyers’ wives) only become structurally endogamous because at some future time the children of this “outsider” relink their family back in with other couples in the structurally endogamous core. It is not that the wealthier farmer eschews the merits of farmstead-valley endogamy; he may envision the possibility of relinking as existing for his children, should the need for farmstead property reconsolidation arise, if and when the farmstead becomes redivided among heirs. Temporal indeterminacy is thus built into the concept of structural endogamy from the start.<sup>48</sup> Further, a person may belong to a structurally endogamous core by one marriage, but is not so constrained in the next. It is not the individual who is constrained by the rule of structural endogamy; the constraint is in the way her social relationships are necessarily embedded in an emergent pattern. It is the relations in the network that are classified into mutually exclusive sets of structural endogamy, not the players.

That social rules and customs are connected to social-class formation may not seem surprising, yet without network analysis and the concept of structural endogamy (linked here to qualification for heirship and to property consolidation, out of which class distinctions emerge) it has been difficult to see a common characteristic with Lévi-Strauss's definition of "elementary systems": those in which marriage choices are strictly constrained to certain categories of persons or relations – our emphasis – as a function of social structure. In the present case, the rules are emergent out of statistical processes that are indeterminate at one point in time but highly determinate with historical hindsight. Yet the precise grouping principle that helps explain regularities of class formation and reproduction, differences in property consolidation, and rules of exclusion or out-migration of all but a few members of the sibling set in each new generation is not so different that the emergent rules of classical "elementary structures."<sup>49</sup>

In principle, the indeterminacy of structural endogamy is no different from the indeterminacies of "life course" regularities in which, for example, one cannot predict that a given individual will do X in the next so many years but that, if they do X (marry, have children, or reach a certain stage in the domestic cycle), their lives will alter in predictable ways. Structural endogamy is one of many emergent "structured and structuring" network structures that illustrates social rules as guiding principles rather than as static determinisms. Thus, we have here a set of "rules" that allow strategic variants in behavior, and so constitute a highly dynamic set of strategic alternatives in terms of how socioeconomic games are constituted. We have seen various examples in the context of the farming village of how to utilize the concept of games as a form of symbolic exchange whose aim, following Von Neumann and Morgenstern, is to establish maximal differential values from statistical regularities, thus constituting the basis of the concrete economy. Case studies such as this one, with extensive social network as well as economic exchange data, could be very useful to explore the consequences of alternate types of rationality involved in socioeconomic systems, ones that differ in the time-frames they utilize, along with attendant differences in types and levels of uncertainty.

In the short run of market rationality, class – in Weber's sense of economic situation – is about income, career, occupation, access to resources. In the longer run, however, positional advantage in markets and marketplaces tends to accrue on the basis of affiliation, and social class as class affiliation becomes imbued with issues of alliance, social

acceptance, lifestyle, and preservation of values associated with status and socially conventional lifeways.

It is at the generational time scale of social-class formation that the concept of structural endogamy draws its interest and theoretic power from the dualities of property and biography: the fact that property does flow not just through idealized or impersonal market transactions but through ownership, inheritance, and social claims and obligations. It is at this level that structural endogamy expresses simultaneously two factors that may be central for the formation of social class: on the one hand, inter-familial relinkage provides a means for reconsolidation of wealth – or other cultural resources that stem from an ancestral source and are diluted by competing lines of ancestry – that would otherwise devolve bilaterally in a social group, while, on the other, the social relinkage of biographies through alliance and multiple connectivities expresses social boundary and social reinforcement criteria linked to acceptance of affiliation into a concretely interlocking set of social circles. The constitution of intergenerational stratification is not, as Lévi-Strauss conceived it, a question of the exchange of women, but of the linking and relinking of families in which “social exchange” is just one expression of a broader institutional process and set of strategies that take place within a network dynamic of structural endogamy. The broad class cleavages associated with contrastive patterns of social relinking and property consolidation, and strategic orientations that differentiate within these cleavages, are of course, in Bourdieu’s terms, also associated with habitus differences expressed in lifestyle, preferences, tastes, and judgments. These differences, arising and shifting out of long-run network affiliations, profoundly affect the short-run of behaviors associated with class as dispositions toward economic or “market” resources.

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#### Notes

1. Pierre Bourdieu, *Distinctions: a Social Critique of the Judgment of Taste* (Cambridge: Harvard Press, 1984), 102. See also 107-10.
2. An illuminating discussion of the common dimensions of the class concept across different authors, and of the differences in emphasis on what is most critical, is given in Stanislaw Ossowski, "Different Conceptions of Social Class," Reinhard Bendix and Seymour Martin Lipset, editors, *Class, Status, and Power*, 2nd edition (New York: The Free Press, 1966), 86-96.
3. Bourdieu, *Distinctions*, 170.
4. The habitus of an individual is a durable training (derived in part from class origin and education and subsequently modified by eventual class membership) that is the product of internalization of culturally arbitrary dispositions (inclining agents to act and react in certain ways), capable of perpetuating themselves without being consciously coordinated or governed by any "rule," and capable of generating a multiplicity of practices and perceptions in areas other than those in which they were originally inculcated.
5. Max Weber, *Economy and Society: An Outline of Interpretive Sociology*, 3 vols. (New York: Bedminster Press, 1978), 302.
6. Max Weber, "Class, Status and Party," in Bendix and Lipset, *Class*, 22.
7. Arjun Appadurai, editor, *The Social Life of Things* (Cambridge: University Press, 1988). See especially Appadurai, "Introduction: Commodities and the politics of value," and Igor Kopytoff, "The Cultural Biography of Things: Commoditization as Process."
8. On flow networks see Arthur Iberall, "On Rivers," in F. E. Yates, editor, *Self-Organizing Systems: The Emergence of Order* (New York: Plenum Press, 1987), 33-48, and "A Theoretical Model for Average River Runoff," *GeoJournal* 21/3 (1990): 223-231. For references to collaborative work on the physical foundations of the networked

flow of human activity streams, see Alexander Moore, *Cultural Anthropology: The Field Study of Human Beings* (San Diego: Collegiate Press, 1992) and "Understanding Event Analysis Using the Films of Timothy Asch," *Visual Anthropology Review* 11 (1995): 38-52.

9. See T. Jola, Y. Verdier, and F. Zonabend. "Parler famille," *L'Homme* 10/3 (1970): 5-26, and Martine Segalen's *Quinze générations des Bas-Bretons. Parenté et société dans le pays bigouden sud. 1720-1980* (Paris: PUF, 1985) and *Historical Anthropology of the Family* (Cambridge: University Press, 1986). A system of marriage and inheritance strategies similar to the Austrian case is also described by Pierre LaMaison in "Les stratégies matrimoniales dans un système complexe de parenté: Ribennes en Gévaudan (1650-1830)," *Annales Economies, Sociétés, Civilisations* 4 (1972): 721-743.

10. If individuals were the points of the graph, then the circuits of relinking would be composed of alternating consanguinal and affinal links. If consanguinal groups of descendants of the linking ancestors were the points, the circuits would be through links of marriage. In our graphs, couples are the points, and the links between them are through consanguinal relations. Note that "adjacency" of couples in our graphs is not a directed relation. One could define directed circuits by considering the direction of wife-giving links between male lines or of husband-giving links between female lines, but directed cycles of marital exchange are not considered to be relevant to this study since the kinship system is bilateral.

11. LaMaison, "Les Stratégies," see also Segalen, *Quinze générations*, 124. Generalized exchange applies to the general case of relinking among  $k$  lines, where  $k \geq 2$ . Restricted exchange applies to the case where  $k = 2$ , and the exchange is a direct one between two family lines.

12. Pierre Bourdieu. "Les stratégies matrimoniales dans le système de reproduction" *Annales Economies, Sociétés, Civilisations* 4-5 (1972): 1125. See also "Célebat et condition paysanne," *Etudes rurales* 5-6 (1962): 33-135. The former was translated by Elbert Forster and Patricia Ranum, as "Marriage strategies as strategies of social reproduction," in *Family and Society*, editors, R. Forster and O. Ranum (Baltimore: Johns Hopkins University Press, 1976), 117-44.

13. Douglas R. White and Paul Jorion, "Representing and Analyzing Kinship: A Network Approach," *Current Anthropology* 33 (1992): 454-63, and "Kinship Networks and Discrete Structure Theory: Formal Concepts and Applications," *Social Networks* 18 (1996): 267-314. Michael Houseman and Douglas R. White, "Taking Sides: Marriage Networks and Dravidian Kinship in Lowland South America," in Maurice Godelier and Thomas Trautmann, editors, *Transformations of Kinship* (Smithsonian Institution Press, forthcoming) and "Ambilineal Sides and Property Flows among the Sinhalese: Refiguring Ethnography of Dravidian Kinship and Exchange," in *Kinship, Networks and Exchange*, edited by Thomas Schweizer and Douglas White (Cambridge University Press, forthcoming). Douglas R. White and Thomas Schweizer, "Networks and Culture: Kinship and Stratification in Rural Java," in *Kinship, Networks and Exchange*.

14. This concept is developed in White and Jorion, "Representing," see endnote 13. For the graph-theoretic proofs and algorithms related to graph theoretic blocks, see Alan Gibbons, *Algorithmic Graph Theory* (Cambridge: University Press, 1985).

15. George Homans and David Schneider, for example, in their 1955 book, *Marriage, Authority and Final Causes*, argued that many of Lévi-Strauss's arguments about generalized exchange suffered from "final cause" reasoning back from social functions such as broader integration, to motivations from social action. Not so the block concept within a community.

16. Homogamy, for example, describes intermarriage among people of the same status.

But homogamy may produce quite different types of endogamy, as for example when siblings are of very different status due to inheritance of property.

17. Claude Lévi-Strauss, *Structural Anthropology* (New York: Basic Books, 1963), 296.

18. Brudner, *The Ethnic component*, focused on the third domain, namely how ethnic and language transactions, through the vehicle of marriage networks, form part of a system by which control is exerted over property and community resources. Feistritz is part of a Slovenian-Windisch-speaking minority area in Carinthia, and maintenance of language has been intimately bound up with integrity of a village's communal resources for viable single-heir farms associated with family farmsteads. Brudner, "Occupational Concomitants," also focused on the specific constraints of the ecology that helped maintain the viability of a family farming "house" system and an "impartible" inheritance system in rural Austria. In the valley studied, different types of land, located at different levels, were needed to make the system work, and favored the relinking patterns of village structural endogamy.

19. Lilyan Brudner. *The Ethnic Component of Social Transactions* (U.C. Berkeley Ph.D. Dissertation, Ann Arbor: University Microfilms, 1969), "The Maintenance of Bilingualism in Southern Austria," *Ethnology* 11 (1972): 39-54, and "Occupational Concomitants of Language Variability in Southern Austrian Communities," in J. Fishman, editor, *Advances in the Study of Societal Multilingualism* vol. 1 (1977): 153-181.

20. Princeton: University Press, 1983. Rebel attempts to capture Marx's idea of class and class conflict, however, by employing Dahrendorf's adaptation of Weber's "sociology of domination."

21. *Economy and Society*, 302-306.

22. *Ibid.*, 305-306.

23. From these historically distinct social classes further splits, cleavages, and economic class divisions followed. The division between heirs and buyers, for example, seems to be approaching a new class division at present.

24. *The Ethnic Component*.

25. Herbert Michor, *Die Wirtschaftliche Lage der Untertanen der Herrschaft Wasserleonburg in der Frühen Neuzeit* (Ph.D. Dissertation, Karl-Franzens Universität in Graz, 1949a), *Geschichte des Dorfes Feistritz/Gail. II. Teil. Geschichte der einzelnen Besitzungen (Feistritz-Nötsch, 1951b)*, *Die Wirtschaftliche Lage der Untertanen der Herrschaft Wasserleonburg in der Frühen Neuzeit. II Teil. Beilagen, Skizzen und Pläne* (Dissertation, Karl Franzens Universität in Graz, 1949b), *Geschichte des Dorfes Feistritz/Gail. I. Teil. Verfasst im auftrage der Gemeinde Feistritz (Feistritz-Nötsch, 1951a)*, and *Geschichte des Dorfes Feistritz/Gail. II. Teil. Geschichte der einzelnen Besitzungen (Feistritz-Nötsch, 1951b)*.

26. *Rebel, Peasant Classes*.

27. *Rebel, Peasant Classes*, 32, 157. For the situation in Feistritz, see Brudner, "Maintenance of Bilingualism."

28. Among the remaining cases, the husband buying 92 did inherit 45 but sold it, his father bought 45 after the grandfather sold 17; the father of a couple buying 9 in about 1880 came from outside the village, the husband was his only son to come to the village and went on to purchase nine other farmsteads to establish a new record for entrepreneurship; the husband buying 9 was an illegitimate child and got the money for the purchase from his mother; the medical doctor purchasing household 69 did not run a farmstead, and his sister inherited the family farm; and the mother of the man purchasing 5 came from 100 but was not an heir.

29. Ancestors of the buyers of 77 trace back through the husband to a line of ancestry

occupying household 11 (the wife's ancestors, not shown, come from outside the village); male ancestral lines of the husbands purchasing 58 and 49 trace back to households 47 and 24, respectively. For the couple buying farmstead 90, parents of both husband and wife come from within the village: the wife's line of male ancestry resided in farmstead 26 for six generations, and then goes back to 83, which happens to be the household of origin of the husband, but he is not a blood relative of the wife since they lack a common ancestor, at least through their links in Feistritz; his ancestors, in fact, come from outside the village.

30. This son is only shown in Figure 1 in residence in household 9.

31. The strategies by which these games are played may be cooperative (as with pooling of resources through marriage) or competitive (as with opting for individual maximization in splitting up of the farm equally among heirs when the owner dies intestate, which does happen occasionally). Farmstead purchase consistent with the restrictions of not selling to outsiders has a strong cooperative component, and we often see farmstead purchasers allowing members of families who have gone bankrupt to buy back ancestral properties by gradual payments derived from wage labor.

While villagers compete in the markets for land and farmsteads, their market behavior indicates a recognition of their economic interdependence and their mutual interest vis-à-vis outsiders. Note that maintenance of renewable resources for wealth production (like that of pure economic maximization) may be a game in itself, or a variant of the principal game of survivorship. One of the crucial strategies here, which has both cooperative and competitive aspects, is the trading of land parcels or reuniting land parcels through marriage, parcels that maintain the productive viability of impartible-core farmsteads. This is the game that the farmers of lesser wealth are engaged in. It may be seen as a variant of the sociobiological game. It allows two trade-off positions: one is the resource-intensive strategy of high investment in one or a few children; the other is the reproduction-intensive strategy of producing more children to increase overall survivorship even if this means lower resource investments per offspring. The single-heir system has the potential to combine both high investment in one child who provides a secure base of renewable resources for farm production, while other children are provisioned – in demographically variable numbers – through quitclaims. There is strong motivation to combine these two possibilities by giving land parcels or buildings as quitclaims that make their recipients more attractive in the marriage market. Hence, for the majority of villagers, who are not wealthy enough to guarantee secure provision for their children, the game of recombining resources into renewable-production farmsteads is played out through inheritance bequests and in the marriage market.

32. Michor, *Die Wirtschaftliche Lage*, is a crucial source for the history of Wasserleonburg and the surrounding villages.

33. See also S. Khera, "Illegitimacy and mode of land inheritance among Austrian Peasants," *Ethnology* 20 (1981): 307-323, and Pier Paolo Viazzo, "Illegitimacy and the European Marriage Pattern: Comparative Evidence from the Alpine Area," in L. Bonfield et al., editors, *The World We have Gained: Histories of Population and Social Structure* (London: Basil Blackwell, 1986).

34. "Célebat."

35. Brudner's two years of continuous fieldwork in Feistritz in 1967-1969 provided the basic data for this study, supplemented by information collected by Brudner and White in the summers of 1992, 1993, 1994. The deeper ethnographic paradigm of the ethnography was predicated on testing the Lévi-Straussian theory that women, goods, services, and language construct specific spheres of exchange. Brudner's 1969

dissertation is of specific importance in understanding the local systems under discussion, including the mediation of German and Slovene usage in relation to local patterns of kinship, marriage, and economic exchange; the kinship data collection in 1969, however, awaited the development of an appropriate network methodology and conceptualization.

36. This is much higher than for the farm-buyer ancestries of Figure 1 where the rate is 10 percent, and reflects the diminished attraction of farming for sons of the poorer families, some of whom “auswandert” in search of wage labor in spite of their qualifications for heirship.

37. The period around 1800 in this graph is sparsely connected because we reconstructed family links between generations only up to the previous decade.

38. There is one exception that arises from two sisters marrying two brothers and residing in the same household; the two sets of lines overlay one another but they are not eliminated from the block of relinkings.

39. Starting at any point within a block, say the two bottom-most marriages in A (couples residing in farmsteads 23 and 22), we can trace two independent paths, both of which eventually connect (in this case, within 3 generations) to form a circuit relinking two families.

40. Philippe Richard, 1993, “Etude des renchaînements d’alliance,” *Mathématique, Informatique et Science humaines* 123: 5-35.

41. See Brudner, “Occupational Concomitants”; H. J. Habakkuk, “Family Structure and Economic Change in Nineteenth-Century Europe,” *The Journal of Economic History* 15 (1955): 1-12; and John Hajnal, “European Marriage Patterns in Perspective,” in D.V. Glass and D. E.C. Eversley, editors, *Population in History: Essays in Historical Demography* (London: E. Arnold, 1965), 101-143.

42. John W. Cole and Eric Wolf, *The Hidden Frontier: Ecology and Ethnicity in an Alpine Valley* (New York: Academic Press, 1974).

43. Philippe Richard, “Etude,” takes the essential step for our purposes of establishing statistical measures for the comparison of rates of relinking across populations. 44. As noted in the text, relinking blocks are well defined in graph theory as sets of points, each as large as possible, where every pair of points in the same block is connected by a circuit that runs through other points in that block. 45. Units of structural endogamy also contain hierarchical groupings based on stronger types of relinking. Types of relinkings defining such hierarchies vary from single to multifamily (successively weakening) relinkings, or blocks that remain connected under the removal of successively larger numbers of points, from one to many (defining successively stronger blocks).

46. *Structural Anthropology*, 125.

47. “Representing” and “Taking Sides.”

48. This is a forward-leaning indeterminacy: the fact that we see farmers marrying outsiders today does not mean that their inheritors will not at some future time relink through marriage with other lines of heirship in the village.

49. On this point, see “Taking Sides.”