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OCCUPATION AND KINSHIP IN A DEVELOPING
SOCIETY

Stuart M. Plattner

OCCUPATION AND KINSHIP IN A DEVELOPING SOCIETY

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This article presents data on kin-ties within two occupations of an endogamous community in southern Mexico: female pork vendors and male wage laborers. The social and economic nature of the occupations suggests that kin-relations will be more valuable in pork vending than in wage laboring. The difference in structure of the kin-ties between the two groups is consistent with this expectation. The conventional network measure of density is shown to be insensitive to structural differences. A measure of clustering is used that reflects this difference.

Introduction

We would expect kinship to be important in traditional marketing. This is because occupations in traditional societies are usually learned in the local--usually endogamous--community. Socialization within the extended family thus substitutes for the specialized vocational training found in industrialized societies. Thus any group of people sharing an occupation in a traditional community will probably be kin-related to each other more than we would expect if we chose a sample of people from the community at random.

This is obvious with respect to caste societies, which represent one extreme of a continuum. The logical other extreme would be a society where education is related to aptitude rather than social position, and where occupations are allocated by open, fair, competitive tests. Modern agrarian societies would fall close to the caste end of this continuum. Kinship is unimportant in the function of most occupations in the industrialized nations, yet any one who has tried to enter a skilled craftsman's union can tell how vital a force it remains.

In general a traditional occupation which is highly desired, but restricted in membership, would have more kin-relations among members than otherwise. The occupation could be described as "closed". The restriction in membership can be political, if membership is administered by guilds or unions; economic, if much capital is necessary to enter the occupation and loans are not readily available from sources other than kinsmen; or cultural, in that technical and esoteric knowledge may be required and not readily available from non-kin. Occupations of low status existing in environments

rich in alternative niches would have a more open entrance because of the low demand. The degree of kinship among members of an occupational category also depends upon the ability of the "haves" (the people already practicing the occupation) to apply negative pressure on the "have-nots". Where face-to-face contact is required, pressure is easily applied; if the occupation can be practiced in isolation, the opportunity to make things unpleasant for newcomers is restricted. Pressure can be applied indirectly, however: if credit is necessary and the sources of credit are limited, then the "haves" need only control or influence the creditors to restrict entrance into their niche.

It is not surprising to find kinship ties organizing occupations in lineage-based societies. Lewis (1962), for example, discusses the role of kinship in structuring long-distance commerce in Somaliland. Data concretely linking kinship and occupations in bilateral agrarian societies is not abundant. C. Legerman has presented a geneological chart showing how 17 female poultry vendors in a Haitian market were related (1962). She explained their interrelation by implying that the bilateral kinship network provided security and trust in a commercial arena without strongly established business ethics (p. 148). We may question the existence of any traditional market without business ethics, but the data clearly showed that this group of women were tightly kin-related. Poultry selling was considered to be a good occupation by the women, who sat together in the marketplace and travelled together to rural markets to buy poultry from farmers. Thus the occupation was highly valued and there were many opportunities for established vendors to make things uncomfortable for new vendors, if they so wished.

W. Davis, describing a Philippine urban market, mentioned that most sellers of specific classes of goods were related (1973:188). Weldon and Morse (1970), on the other hand, found little evidence of kin relations in a highland Peruvian market, although their brief survey was not likely to have caught such relations. Other writers have discussed the importance of kinship in a general way, but have not presented data showing the precise nature of the connection.

The theory I propose, then, is that the more occupations are politically, economically, or culturally controlled, the more valuable an occupation is, and the more easily applicable are exclusionary pressures, the more we will find people practicing the same occupation to be related to each other. Market-place trading fits the conditions of the theory well because, in many lines of merchandise, the occupation is remunerative and valued, some capital is required, the marketers are often formally organized, and the extreme face-to-face conditions of trade make it easy for an established group to obstruct the business of newcomers. Here I will present data about kinship links in two occupational categories in a traditional community: female pork retailers and male wage laborers. I will show how the socio-economic structure of each occupation is consistent with the pattern of kin-relations found in each: clustered among pork vendors and unclustered among wage laborers.

Pork Retailing in Cuxtitali

The men of Cuxtitali (pronounced koos-tee-tah-lee), a neighborhood of about 1,500 people attached to the city of San Cristobal de Las Casas, Chiapas, Mexico, have been itinerant peddlers and pig buyers for hundreds of years. The barrio was in existence as early as 1564, and has specialized in the production of pork and pork products since at least 1700. For as long as any living person remembers, the women of Cuxtitali have enjoyed a local monopoly over the retail sale of pork. The data I will discuss refer to 1970, when the total population of the city was about 20,000.

In 1970 there were about 45 male traders in Cuxtitali who bought pigs from Mayan Indian peasant farmers in the hinterlands of highland Chiapas, and brought the pigs back to the city for resale. Traders ordinarily bought herds of 30 to 40 pigs in trips lasting a couple of weeks to over a month (Plattner, 1975). The pigs were walked back to the city and disposed of in Cuxtitali. Two or three large-scale butchers, who slaughtered from 6 to 10 pigs daily in their back yards, frequently bought large herds. About 20 of the pig buyers slaughtered pigs occasionally in their households, as the men brought them in or as the availability of scarce capital allowed the purchase of herds. From time to time people in other neighborhoods slaughtered pigs and sold pork wholesale to Cuxtitali vendors or retailed the pork themselves. While perceived as a potential threat, at the time of this research such "exogenous" pork was not significant.

Roles in pork processing were somewhat sex-typed: men usually killed the pigs, bled them, and shaved them over open pit fires to singe the hair. The person who killed the pig usually also cleaned the intestines, removed

the head and feet and split the carcass into sides. Women usually carved the sides into specialized cuts, made sausage and other cooked dishes from the intestines, and supervised the frying of the skin into chicharrones, or cracklings, although male helpers were needed to manipulate the enormous cauldrons of hot lard. Only women sold pork in the city market or along the streets in retail trade, however men could deliver bulk pork wholesale to local ham processors and restaurants.

Pigs were commonly slaughtered in the early afternoon, and the meat hung in a cool room overnight since no one in the barrio owned a refrigerator. San Cristobal's 7,000 foot (2150 meter) altitude provided cool nights which delayed spoilage. Regular customers, who were also friends and neighbors, were advised of the availability of pork in the afternoon, and arrived the next morning beginning around 6:30. The wife of the house dispatched the pork and a municipal bus took the vendors to the city market at about 7:30 or 8:00.

Vendors would sell in the market until about 2:00, taking time off at intervals to do their personal marketing. The pork vendors were assigned a section of the concrete stalls of the municipal market. The stalls were numbered, rented for an insignificant fee, and were occupied by vendors on a traditional basis. There were more than enough stalls for all vendors. As is common most reports of marketing in traditional markets, cooperation between vendors far outweighed evidence of competition, even in the face of the factions and feuds that normally existed among relatives and neighbors. For example, at times a vendor would run out of certain cuts before a preferred or regular customer had arrived. She could then buy pork at near wholesale prices from another vendor in order to provide for her customer.

When a stall was left unattended, sellers in neighboring stalls would watch over it. Most significantly, vendors never importuned a customer who was dealing with another stall. They would wait until the other transaction had finished before calling attention to their own pork. As is usual in commerce everywhere, the larger the scale and the more regular the trade, the more chance the purchaser had of buying on credit. Vendors were expected to pay their debts to butchers weekly, and butchers were usually allowed a couple of weeks or more to settle their debts with pig traders.

III

Kinship and Occupations

Cuxtitali is like a traditional peasant community in the technical sense of having an identity distinct from, and inferior to, the larger society it is embedded in. Cuxtitaleros are said to be rougher and more backwards than other residents of the same socio-economic position in San Cristobal. There is a myth in San Cristobal that Cuxtitali was settled originally by Quiche Maya Indians from Guatemala brought to Mexico by Spanish conquerers. Because of this--and reinforcing it further--Cuxtitali is heavily endogamous. Out of 180 marriages in 1970 where both spouses were alive and living together, less than 30 included women not born in the barrio; and two-thirds of these exogenous women were from neighboring barrios of the of the city. Therefore any group of people drawn from the neighborhood would be composed of relatives to some extent. Ideally the relation of each person to every other would be specified in a large matrix, and a probability distribution of the number of relatives one would expect to find in a randomly chosen group of any definite size would be calculated. Computer simulation

could be used to create a probability distribution (cf. Plattner, 1972), but the requirements of informant time and attention necessary to establish the matrix of relations are extreme in a group of many hundreds of individuals. I can not, therefore, say what the baseline "random-assortment" number of relatives in any group of size N would be.

Instead, consider the sample of adult men in Cuxtitali who worked as wage laborers in 1970 (Figure 1). Each point and identification number represent an adult male. Thick lines connecting a dyad represent nuclear family ties--in this case fatherhood or brotherhood. Thin lines represent all other kin-ties recognized by the community, including affinal links. All kin-ties appearing on the chart are demonstrated rather than stipulated; in other words, I have traced the links through a concrete set of named individuals appearing in geneologies which I elicited from informants between 1967 and 1970¹.

Wage laboring is the least remunerated, prestigious and skilled of the occupations open to Cuxtitali men. Rather than being a specialized occupation, wage laboring is the absence of a specialization--it is the job-of-last resort for those who are unable to do better things. The jobs include working for long distance itinerant peddlers; working as field hands in local farms; working in the city as material handlers on construction projects; and working out of the city as field hands in coastal plantations and ranches. The daily wage during 1968-70 varied between six and ten Pesos (48 to 80 cents U.S. at that time).

There is no reason that derives from the nature of the occupation for wage laborers to be related to each other. In terms of the theory discussed above, wage laboring is an open occupation because no administrative structure governs its personnel; no capital is necessary for its practice;

and the skills required are available to all men in the region. Because of the increasing demand for unskilled labor in recent years, getting a job as a wage laborer has been extremely easy.

However wage laborers tend to be poor, and in a very general way one's economic position is related to one's family in Cuxtitali. If the father's economic performance is impaired in any way -- through sickness or drunkenness, for example, the sons' economic education could suffer. Orphans without suitable male relatives can face a similar hardship. If other relatives or fictive kinsmen look after them they have a chance to attain normal levels of economic productivity; if not, they are forced to work as wage laborers. While there may be little advantage to a laborer in having laborer relatives, the social and economic conditions of life may predispose such relations.

The pattern of relations in Figure 1 can then be taken as a general baseline against which to measure other patterns of kin-ties. There is one large set of eight clustered people, including a set of four and another set of two brothers; and a small block of four interrelated people (numbers 133, 147, 160, and 193). I will use the term "clustered" if the relations among a set of people approach the maximum possible connections². The rest of the people are related in a loose and unsystematic way. I would argue that the structure of the relationship found among this set of men is caused by the endogamous and stratified nature of Cuxtitali society, and not by the special nature of their occupation. If another occupational group displays a pattern of relations comparable to this one, it will not suggest that kinship is important in the function of the other occupation.

Pork vending requires some specialized knowledge of meat-cutting

and processing, some skills in dealing with people on a wholesale and retail level, and expertise in the management of petty business finances. These would be learned within the extended family in Cuxtitali, as they were not skills one would pick up merely by growing up in the barrio. In addition some capital is necessary to start with, although established vendors attempt to conduct their business without any invested capital by obtaining pork on credit and not paying their wholesale debt until all retail sales are finished. There is much face-to-face contact and opportunity for cooperation involved in pork selling, from congregating in small rooms in Cuxtitali in the early morning to buy wholesale pork, to the many hours of the day spent in neighboring stalls in the municipal market. There is also a local union of pork vendors, dominated by the wealthier families in the barrio. These factors enhance the importance of kin-ties in facilitating cooperation among pork vendors. On the other hand, the importance of kinship should not be over-emphasized. It has always been possible to buy some pork out of Cuxtitali, and there have always been empty stalls in the market. Thus some looseness exists in the monopoly that Cuxtitali women have over pork vending.³

The kin-ties among pork sellers are diagrammed in Figure 2. Here there are three large sets of clustered people (pseudonomously labelled Martinez, Gonzalez, and Bautista) and three smaller clustered groups (labelled Lopez, Alcazar, and Morales). Only four pork vendors, or nine percent of the total, are unrelated to any other person working in that occupation. Compared with the pattern of relations among the wage laborers (Figure 1), more pork vendors are tightly clustered into sub-sets. This is consistent with our expectation of the importance of kinship in pork retailing.

We may ask whether the difference between pork vendors and wage

laborers can be quantified and tested statistically. The most conventional statistic used to describe networks is density, (Barnes, 1969; Niemeijer, 1973). The density of a network is the proportion of the theoretically possible dyadic ties that are actually observed in a network. It is expressed as:

$$D = \frac{d}{1/2N(N-1)}$$

D = Density
d = Number of actual dyadic relations
N = Number of persons in network
1/2N(N-1) = Number of dyadic relations possible if everyone is related to everyone else

For example, consider the set of six people labelled Bautista on the bottom of Figure 2 (numbers 12, 16, 19, 22, 43, and 21). Taking just these people into account and ignoring their relations to anyone else, there are 12 relations between them. Three more relations are possible but not actual: 21 with 22, 16, and 12. The total possible number of relations is thus 15, which is $1/2(6 \cdot 5)$. The density of this set of six people is $12/15$, or .80, meaning that 80 o/o of the potential dyadic relations actually exist.

The density of kin-ties among pork vendors is .10, and among wage laborers is .08. This difference is in accord with our theoretical expectations, but is it significant? A chi-square test of the difference of actual dyads and potential-but-not-actual dyads, between the two occupations, yields a chi-square of 1.03 (Table 1). This means that a difference as large as this or larger could occur by chance more than three times in ten.

The density measure does not express the graphically obvious fact that the pork vendors are more tightly inter-related than the wage laborers. The former are more clustered, there are more definable subsets with many relations among them. The wage laborers exhibit, I argue, a degree of interrelationship only slightly more than would be obtained by a random selection of individuals from the community. The many kinship clusters among the pork vendors show that close kin-links play a functional role in selecting people for that occupation. If only clusters with five or more members are chosen (following Barnes, 1969 discussion of clusters and cliques) then the pork vendors have four clustered subsets with 65 dyadic links (labelled Bautista, 10 ties not including #21; Martinez, 24 ties; Gonzalez, 21 ties; and Morales, 10 ties). The wage laborers have one large clustered set labelled Bautista, with 24 ties. Put another way, 63% of the pork vendor ties and 36% of the wage laborer ties are clustered. The chi-square of the difference between the number of clustered and unclustered ties between the two groups is 13, which has a probability of occurring by chance less than one time in a thousand (Table 1). Thus the difference in structure that is apparent by visual inspection of the two patterns, and is expectable by the socio-economic structures of the occupations, is described by the clustering statistic.

Conclusion

The pattern of kinship relations found in two sets of people, female pork vendors and male wage laborers, is analyzed. The difference in density-the number of kin ties as a proportion of all potential ties-is not significant; but the pork vendors are much more closely knitted than the wage laborers. This is shown to be consistent with the socio-economic structure of each occupation, in that kinship plays an active role facilitating both cooperation and the exclusion of competing outsiders in pork vending, and merely serves as a background in wage laboring.

Notes

1. Fieldwork was conducted from 1/67 to 6/68, 6/70 to 7/70, and 1/75 to 8/75. The early work was supported by the National Institutes of Health. The latter research is supported by the National Science Foundation. The technique of data elicitation was to make cards containing each individual's name, spouse, age, address, and other identifying information. Then, for each group of individuals, the relevant set of cards was placed on a table in front of two trained research assistants from the community. Each card was placed next to every other card and the question asked: "Are these people related?". The information received was checked against geneologies of Cuxtitali families that I had previously elicited.

2. A set of people of size N , where $N \geq 5$, will be called a cluster if it has at least $\frac{N(N-1)}{2} - (N-4)$ ties. This produces clusters of at least

the following number of ties:

Size	5	6	7	8	9	...
Dyads	9	13	18	24	31	...

This rule seems to make sense in describing my data. Niemeijer (1973) discusses the general problem of clustering in network analysis. He criticises Barnes' (1969) suggestions, but I do not find Niemeijer's criticisms compelling. The inclusion or exclusion of individuals in clusters must always lie in behavioral or substantive grounds. I see no way to completely avoid arbitrary cut-off points in the calculation of statistics. The difference between the two networks shown here is obvious, and different statistical cut-off points would not change that fact.

3. In fact, by 1975 two men from another, nearby town were slaughtering pigs daily and selling quantities of pork in the municipal market. They were surrounded by hostile Cuxtitali women, although some women from the neighborhood were surreptitiously buying their wholesale pork from these men.

Table 1. Density and Clustering Comparisons Among Pork Vendors and Wage Laborers.

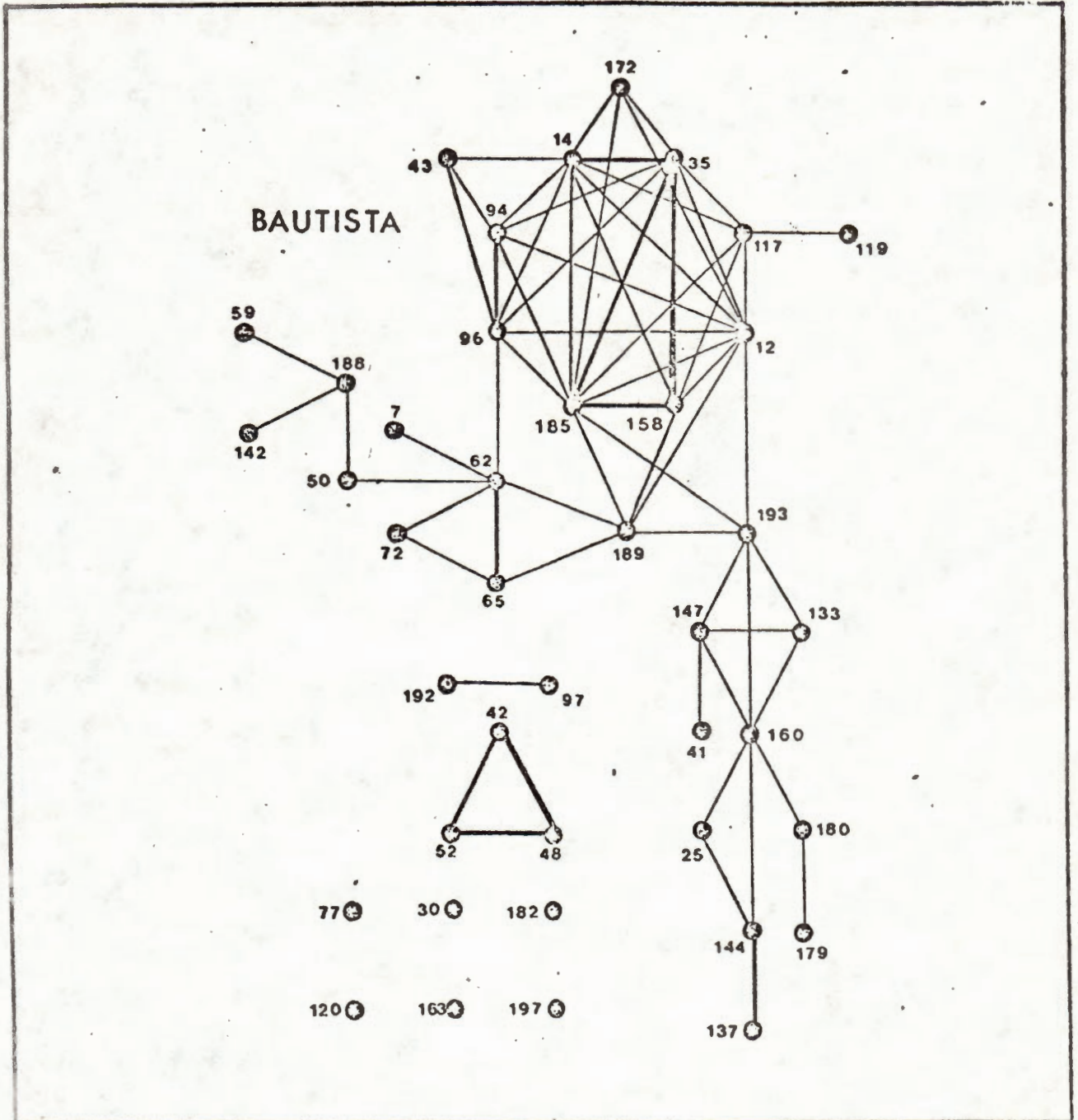
	Actual Ties	Potential Ties	
Wage Laborers	66	1574	1640
Pork Vendors	103	2059	2162

$\chi^2 = 1.03, P > .30$

	Clustered Ties	Unclustered Ties	Total
Wage Laborers	24	42	66
Pork Vendors	65	38	103

$\chi^2 = 13.19, P < .001$

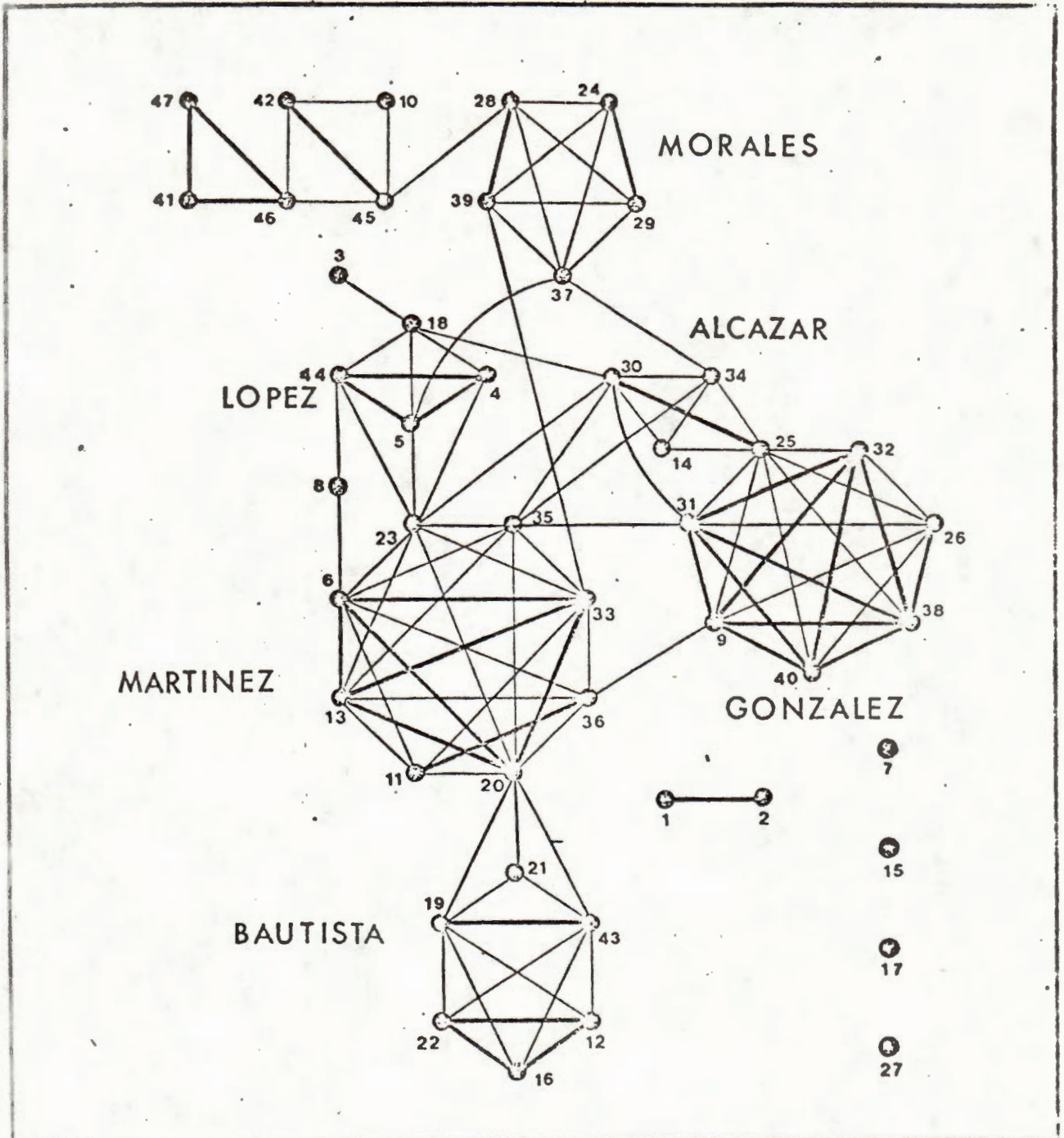
Figure 1



KINTIES AMONG WAGE LABORERS IN CUXTITALI

— NUCLEAR FAMILY TIE
— OTHER KINTIE

Figure 2



KINTIES AMONG PORK VENDORS IN CUXTITALI

— NUCLEAR FAMILY TIE
— OTHER KINTIE

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