22 Social Networks

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An individual's social network is straightforwardly the aggregate of relationships contracted with others, and social network analysis examines the differing structures and properties of these relationships. Such analysis has been applied by variationists fairly extensively over the last two decades or so to explicate informal social mechanisms supporting language varieties specific to particular social groups. Researchers have also addressed the question of how some social groups maintain nonstandard dialects or minority languages, often over centuries, despite pressures (of the kind described by Lippi-Green 1997) to adopt publicly legitimized national languages or varieties.

Social network is better treated as a means of capturing the dynamics underlying speakers' interactional behaviors than as a fixed social category (see Eckert 2000: 1–33 for a discussion of different concepts of "speaker variables" in sociolinguistics). Given that the ties contracted by individuals within and between speech communities may change for many reasons, analysis of change in the operation of the same social network mechanisms which support localized linguistic codes can illuminate the phenomenon of linguistic change. Network-oriented accounts of linguistic change have emerged both in variationist studies of contemporary speech communities, and as post hoc sociohistorical studies of changes completed at earlier stages of the language (Lippi-Green 1989, Milroy 1992, Milroy and Milroy 1985, Nevalainen 2000).

1 The Concept of Social Network

Social network analysis of the kind generally adopted by variationists was developed by social anthropologists mainly during the 1960s and 1970s (see Milroy 1987a, Li 1996, Johnson 1994). Contrary to the assertions of Murray (1993: 162), it is clear from even a cursory reading of the literature that no canonical "real" procedure for analyzing social networks can be identified;

scholars from many different disciplines employ the concept for a range of theoretical and practical reasons. For example, Johnson's (1994) survey alludes to a wide range of approaches within anthropology which hardly overlap with the largely quantitative modes of analysis described by Cochran et al. (1990). This international and interdisciplinary team of scholars is interested in the role of networks in providing support for urban families. Accordingly, their methods are to a great extent driven by a concern with social policy and practice.

Personal social networks are always seen as contextualized within a macro-level social framework, which is "bracketed off" for purely methodological reasons – i.e. to focus on less abstract modes of analysis capable of accounting more immediately for the variable behavior of individuals. Since no one claims that personal network structure is independent of broader social, economic, or political frameworks constraining individual behavior, a social network analysis of language variation does not compete with an analysis in terms of a macro-level concept such as social class.

A fundamental postulate of network analysis is that individuals create personal communities which provide a meaningful framework for solving the problems of daily life (Mitchell 1986: 74). These personal communities are constituted by interpersonal ties of different types and strengths, and structural relationships between links can vary. Particularly, the persons to whom ego is linked may also be tied to each other to varying degrees – ego being the person who, for analytic reasons, forms the "anchor" of the network. A further postulate with particular relevance to language maintenance or change is that structural and content differences between networks impinge critically on the way they directly affect ego. Particularly, if a network consists chiefly of strong ties, and those ties are multiplex or many-stranded, and if the network is also relatively dense – i.e. many of ego's ties are linked to each other – then such a network has the capacity to support its members in both practical and symbolic ways. More negatively, such a network type can impose unwanted and stressful constraints on its members. Thus, we come to the basic point of using network analysis in variationist research. Networks constituted chiefly of strong (dense and multiplex) ties support localized linguistic norms, resisting pressures to adopt competing external norms. By the same token, if these ties weaken conditions favorable to language change are produced. The idealized maximally dense and multiplex network is shown in figure 22.1 in contrast with a loose-knit, uniplex type of network shown in (figure 22.2).

A social network may be seen as a boundless web of ties which reaches out through a whole society, linking people to one another, however remotely. However, interest generally focuses on first-order network ties, constituted by those persons with whom an individual directly interacts. Second-order ties are those to whom the link is indirect, as shown also in figure 22.1. Within the first order zone, it is important for the reasons noted above to distinguish between "strong" and "weak" ties of everyday life – roughly ties which connect friends or kin as opposed to those which connect acquaintances. To supplement the notions of multiplexity and density, Milardo distinguishes "exchange"

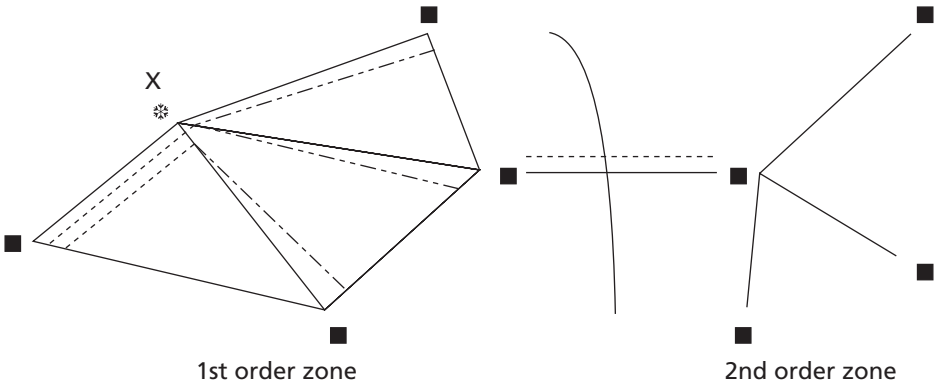

Figure 22.1 High density, multiplex personal network structure, showing first and second order zones

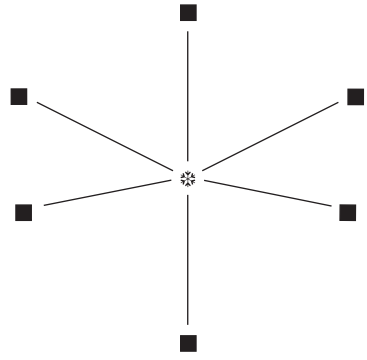

Figure 22.2 Low density, uniplex personal network structure

from "interactive" networks (1988: 26–36). Exchange networks consist of persons such as kin and close friends with whom ego not only interacts regularly, but also exchanges direct aid, advice, criticism, and support. Interactive networks on the other hand consist of persons with whom ego interacts frequently and perhaps over prolonged periods of time, but on whom he or she does not rely for material or symbolic resources. An example of an interactive tie would be that between a store owner and customer. In addition to exchange and interactive ties, Li (1994) distinguishes a "passive" tie, which seems particularly important to migrant or mobile individuals. Passive ties entail an absence of regular contact, but are valued by ego as a source of influence and moral support. Examples are physically distant relatives or friends.

Eckert notes that the people who comprise an individual's personal communities change, as indeed do the everyday problems which such personal communities help to solve (2000: 34). Furthermore, individuals engage on a daily basis

in a variety of endeavors in multiple personal communities. Eckert employs the concept of *community of practice*, which is closely related to that of social network, to locate the interactional sites where social meaning is indexed by linguistic elements, and linguistic change and social meaning are co-constructed. A community of practice may be defined as an aggregate of people coming together around a particular enterprise (Eckert 2000: 35), and in her analysis of the social dynamics of language change among Detroit adolescents, Eckert focuses on intersecting clusters of individuals engaged in such enterprises, (2000: 171–212). Such clusters constitute gendered subgroups instantiating the adolescent social categories which participants themselves construct. Network analysis typically does not attend to the identification of such clusters or the enterprises undertaken by members, but deals primarily with the structural and content properties of the ties which constitute egocentric personal networks.

While close-knit networks vary in their degree of approximation to the idealized representation shown in figure 22.1, networks of this type are the interactional site where localized styles and norms of all kinds are constructed. Thus, for example, Eckert (2000: 210) comments that for the high school students she studied, the construction of local styles was "a function of integration into local networks and access to information. The importance of information is clear at the level of clothing style." She goes on to note that "[c]ertain aspects of linguistic style are also negotiated consciously. I can recall explicit discussions in my own high school crowd of 'cool' ways to say things, generally in the form of imitations of cool people. . . . But in general, linguistic influence takes place without explicit comment and all the more requires direct access to speakers. The adoption of a way of speaking, like a way of dressing, no doubt requires both access and entitlement to adopt the style of a particular group" (Eckert 2000: 211). Eckert is here describing very general social mechanisms by which local conventions and norms – of dress, religion, and general behavior, for example – are negotiated and created, and linguistic norms are no exception. Close-knit networks of the kind where this activity takes place are commonly contracted in adolescence. These are the linguistically influential peer groups which are of such interest to sociolinguists attempting to understand the kinds of language change associated with different points in the life span (see Kerswill 1996). However, such networks also flourish in low-status communities (both rural and urban) in the absence of social and geographical mobility and are important in fostering the solidarity ethos associated with the long-term survival of socially disfavored languages and dialects.

2 Social Networks and Language Variation: Methods and Findings

This section reviews some variationist studies which have employed the network concept, and begins by noting that the effect of interpersonal relationships on

language choices has been explored for a long time in sociolinguistics; witness Gauchat's (1905) account of variation in the vernacular of the tiny Swiss village of Charmey. Much later, Labov's (1972) sociometric analysis of the relationship between language use and the individual's position in the group resembles in important respects Eckert's account of communities of practice as the sites where linguistic norms and social meaning are co-constructed (see also Cheshire 1982 for a comparable account of language variation in adolescent peer groups). Following an ethnographic, non-quantitative tradition of research which has strongly influenced variationist methods, Gumperz's *Discourse Strategies* (1982) provides an extensive discussion of the effects of changing network structures on language choice in bilingual communities. Chambers (1995) identifies a study carried out in Belfast, Northern Ireland, in the mid-1970s (Milroy and Milroy 1978, Milroy 1987a) as the first systematic account of the relationship between language variation and social network structure in the variationist literature. In this section, I discuss some of the major methods and findings of this research, before reviewing three later studies which take it as a point of departure.

An ethnographically-oriented data-collection procedure, influenced by the work of John Gumperz mentioned above, was used in Belfast whereby the researcher introduced herself to initial contacts as a "friend of a friend" – i.e. a second order network contact of the people participating in the study. These initial contacts passed her on to others, and observation and recording continued until sufficient speakers with the desired characteristics (e.g. of age and gender) were sampled. Crucially, the unit of study was the pre-existing social group, rather than a series of isolated individuals as representatives of particular social categories. By attaching herself to this group and retreating to its fringes as interactions between members progressed, she was able to obtain large amounts of spontaneous speech as well as relevant social and demographic information, and the effect of the observer on the data was lessened. Fieldwork procedures of this general type have been used extensively in both bilingual and monolingual communities (as described by Milroy et al. 1995), and problems of access are rarely reported. Kerswill (1994) describes their implementation in western Norway.

Data recorded in the Belfast study were examined to compare the language patterns of 46 speakers from three low status urban working-class communities – Ballymacarrett, Hammer, and Clonard. Eight phonological variables, all of which were clearly indexical of the Belfast urban speech community, were analyzed in relation to the network structure of individual speakers. In all three communities networks were relatively dense, multiplex, and often kin-based, corresponding to those described by many investigators as characteristic of traditional, long-established communities minimally impacted by social or geographical mobility (see, e.g., Young and Wilmott 1962, Cohen 1982).

Although a social class index of the kind used in the early days of sociolinguistics could not discriminate between these speakers, the extent of individuals' use of vernacular variants was found to be strongly influenced by level

of integration into neighborhood networks. For example, some people worked outside the neighborhood and had no local kin and few local ties of friendship, while others were locally linked in all these capacities. Such differences in personal network structure clearly spring from many complex social and psychological factors, and so interact with a number of other variables; examples are generation cohort, the recent history of the neighborhood, and gender. Since the gender/network relationship has proved to be suggestive of a general explanation of gendered patterns of language variation and change, I shall comment on it here.

Men in the Belfast neighborhoods generally contracted denser and more multiplex localized network ties than women, and network structure correlated with language use patterns differently for men and women. A similar disjunction between the effect of male and female networks is reported in Dubois and Horvath's (1998) variationist account of Cajun English. Eckert confirms and elaborates the strongly gendered character both of network clusters and of the network/language relationship (2000: 120–4). Noting a tendency for women to contract ties across a wider social spectrum, Chambers (1995: 124–8) attributes the frequently observed tendency of men to approximate more closely than women to vernacular norms to this difference in network structure. In broader investigations of the social trajectory of language change in two different urban locations, Milroy and Milroy (1993) and Docherty et al. (1997) explore the interaction between gender and network; male norms are associated with localized variants, and female norms with supra-local (but not necessarily standardized) variants. Milroy (1999) attributes the relative conservative, localized character of male speech behavior to the particularly constraining effect of male peer networks. The interacting effect of network and gender on patterns of language variation and change remains an extremely important research topic which will be alluded to again in this chapter.

2.1 Measuring social network structure

Given the ethnographic orientation of social network analysis, a major challenge for variationist researchers is to devise a procedure for characterizing differences in network structure which reflects the everyday social practices of speakers. The Belfast study developed a Network Strength Scale to assess speakers' network characteristics on five indicators of multiplexity and density. Milroy (1987a: 141f) describes in detail both the rationale for selecting the indicators and procedures for operationalizing the Network Strength Scale. Briefly, a score of one or zero was assigned to each indicator, and a total network strength score calculated for each individual which was the sum of individual indicator scores. The indicators focused on various relationships *within the neighborhood* of kin, work, and friendship which had emerged in the course of the fieldwork as significant to participants. They were

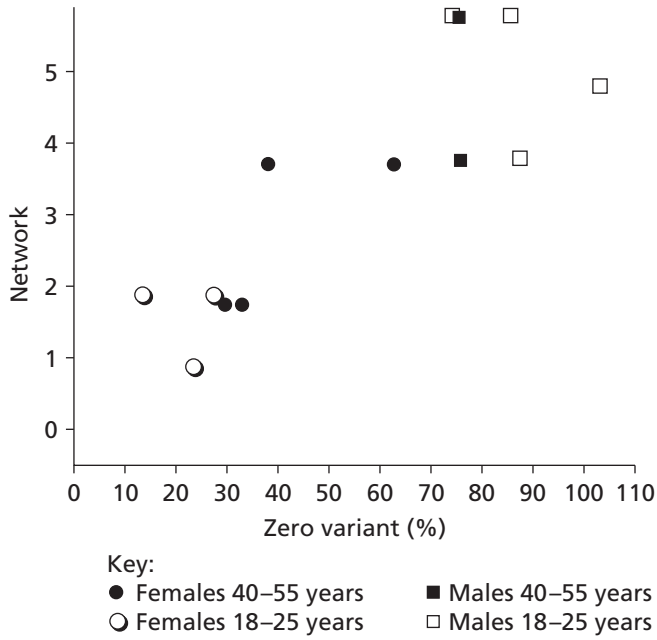

Figure 22.3 Ballymacarrett men's and women's scores for (th), plotted against network scores

- membership of a high density, territorially based group (e.g. a bingo or card-playing group, a gang, or a football team or football supporters' club);
- having kinship ties with more than two households in the neighborhood;
- same workplace as at least two others from the neighborhood;
- same workplace as at least two others of the same gender from the neighborhood;
- voluntary association with workmates in leisure hours.

A series of statistical analyses revealed a clear relationship between personal network structure and phonological variation, usually complicated by the interaction of other social variables such as the age and gender of the speaker. The strongest vernacular speakers were generally those whose neighborhood network ties were the strongest. Figure 22.3 illustrates this tendency in Ballymacarrett, where patterns of use for the variable (th) are plotted against network structure. The variable pattern represented here is the presence vs. absence of the voiced interdental fricative [ð] in intervocalic contexts in such words as *mother* and *brother*; deletion scores for each speaker, whose age group and gender are also specified, are plotted as percentages against individual network strength scores. The interacting effects of gender and network noted above are also evident; not only are women's network scores lower than men's,

but the woman with the highest (th) index scores a full 10 percent lower than the man who scores the lowest.

It is on the basis of language/network relationships such as these across several linguistic variables and many more speakers that the close-knit network is interpreted as an important mechanism of dialect maintenance.

2.2 *Network concept in small-scale communities: some examples*

The attractions for variationists of a network approach can be stated quite briefly. First, it provides a set of procedures for studying small groups where speakers are not discriminable in terms of any kind of social class index – as for example the eastern US island communities investigated by Wolfram et al. (1999). Other examples are minority ethnic groups, migrants, rural populations, or populations in nonindustrialized societies.

A second advantage of a social network approach is that it is intrinsically a participant rather than an analyst concept, and so has the potential to elucidate the social dynamics driving language variation and change. Finally, network analysis offers a procedure for dealing with variation between individual speakers, rather than between groups constructed with reference to predetermined social categories. Eckert (2000: 1–33) discusses in some detail the very different concepts of a social variable implied here. These methodological issues are exemplified in many studies carried out in the 1980s and 1990s, such as that by Russell (1982) in Mombasa, Kenya; Schmidt (1985) of Australian Aboriginal adolescents; Bortoni-Ricardo (1985) of changes in the language of rural migrants to a Brazilian city; V. Edwards (1986) of the language of British black adolescents; Schooling (1990) of language differences among Melanesians in New Caledonia; Lippi-Green (1989) on dynamics of change in the rural alpine village of Grossdorf, Austria; W. Edwards (1992) of variation in an African-American community in inner-city Detroit; and Maher (1996) of the persistence of language differences in the isolated island community of St. Barthélemy, French West Indies. Lippi-Green (1989), Edwards (1992) and Bortoni-Ricardo (1985) are briefly reviewed below, to illustrate a range of different applications of the network idea.

The relative socioeconomic homogeneity of the inner-city Detroit neighborhood studied by Walter Edwards (1992) made social network analysis an attractive procedure for dealing with intra-community linguistic variation. While the principal factor associated with choice of variant was age, the most important factor which distinguished age-peers of a comparable social and educational background was participation in neighborhood culture. Edwards interpreted such participation as indicative of relative integration into local networks, and measured this integration by means of a Vernacular Culture Index. This was constructed from responses to 10 statements which could range from Strongly Disagree (1 point) to Strongly Agree (4 points). Five statements

were designed as indicators of the individual's physical integration into the neighborhood, and, like the Network Strength Scale used in Belfast, focused on localized interactions with kin, workmates, and friends (e.g. "Most of my relatives live in this neighborhood or with me"; "Most of my friends live in this neighborhood"). Convinced of the importance of attitude in accounting for variation, Edwards designed the other five statements to indicate evaluations of the neighborhood and of black/white friendship ties (e.g. "I would like to remain living in this neighborhood"; "I do not have white friends with whom I interact frequently").

Yet another set of indicators was relevant to Lippi-Green's (1989) study of language change in progress in Grossdorf, an isolated Austrian Alpine village with 800 inhabitants. Noting the unhelpfulness of macro-level concepts such as class in uncovering the relationship between language variation and social structure, Lippi-Green examined in considerable detail the personal network structures of individuals, constructing a scale which used 16 differentially weighted indicators. Some of these were associated with the familiar domains of work, kin, and friendship, while others dealt more specifically with local conditions – such as the number of grandparents familiar to the speaker who was a core member of the village, or the involvement of the speaker's employment with the tourism industry. Particularly important were indicators which linked speakers to major village family networks. Overall, the best correlate of linguistic behavior (conservative vs. innovatory) was integration into three important networks, including those which involved workplace and exposure to non-local language varieties. However, the subtlety of Lippi-Green's network measurement scale allowed her to examine correlations both with all of it and some parts of it, revealing for example gender-specific social trajectories of language change and variation.

In addressing the changing language behavior of mobile individuals, Bortoni-Ricardo's (1985) account of the sociolinguistic adjustment of rural migrants to Brazlandia, a satellite city of Brasilia exemplifies a very different application of the network concept from those discussed above. Again, the social class concept is not particularly useful in this context, since it does not discriminate between the individuals studied by Bortoni-Ricardo, all of whom were relatively poor. Taking the group's own linguistic norms as a starting point, Bortoni-Ricardo examined the extent to which speakers had moved away from their stigmatized Caipira dialect, rather than attempting to identify a linguistic standard "target".

Bortoni-Ricardo's main hypothesis is that the change in social structure associated with rural to urban migration involves a move from an "insulated" network consisting largely of kinsfolk and neighbors to an "integrated' urban network where links are less multiplex but contracted in a wider range of social contexts. The linguistic counterpart of this change is increasing dialect diffuseness – a movement away from the relatively focused norms of the Caipira dialect (see further Le Page and Tabouret-Keller 1985). Two separate network indices are constructed to measure the changing patterns of the migrants'

social relationships; the *integration index* and the *urbanization index*. The integration index assesses relevant characteristics of the three persons with whom each migrant most frequently interacts – for example, whether they are kin or non-kin, whether ties were contracted prior to migration. The final score measures progress in the transition from an insulated to an integrated type of network – effectively the gradual loosening of close-knit network ties. These changes are correlated with a linguistic movement away from the norms of the Caipira dialect.

The urbanization index focuses not on the migrant, but the characteristics of members of his or her personal network, such as educational level and mobility; indicators are selected to assess the extent to which the migrant's contacts are integrated into urban life. In developing these two quite different types of index Bortoni-Ricardo extends the application of the network concept beyond an analysis of small, close-knit groups of the kind described so far to consider the extent to which individuals have detached themselves from such groups and the linguistic consequences of that detachment.

In an extended discussion of sociolinguists' use of the network concept, Murray (1993) is particularly critical of the quantitative analysis employed by Labov (1972) and Milroy (1987a) on grounds which are more controversial than he claims, and are moreover not always entirely clear. Murray's strongly stated claims of what constitutes an appropriate approach to social network analysis and an appropriate statistical method are disputable. Moreover, a subsequent clarification in *American Speech* (Butters 1995: 20) points out that specific criticisms of Milroy's statistical procedures and results rest on a misreading of her text.

3 Language Maintenance and Shift in Bilingual Communities

Although the discussion so far has concentrated on the language/network relationship in monolingual communities, researchers investigating the social mechanisms of language maintenance and shift in bilingual communities have employed a variant of the same general principle: networks constituted chiefly of strong ties function as a mechanism to support minority languages, resisting institutional pressures to language shift, but when these networks weaken, language shift is likely to take place. This section reviews some of this work, starting with a consideration of the network structure characteristic of immigrant communities.

It has sometimes been suggested that close-knit networks such as those studied in Belfast and Detroit are marginal to contemporary urban life; for example, there is a large sociological literature on "the stranger", the mobile, marginal individual who is often seen as typical of a modern city dweller (Harman 1988). While this perception certainly reflects important aspects of

contemporary urban life (we shall later discuss the linguistic consequences of social and geographical mobility) it does not tell the whole story. Certainly traditional working-class communities like the Italian American "urban villagers" described by Gans (1962) or the close-knit Yorkshire mining communities described by Dennis et al. (1957) have all but disappeared. However, Giddens (1989) points out that neighborhoods involving close kinship and personal ties seem still to be created rather than discouraged by city life, since those who form part of urban ethnic communities gravitate to form ties with, and often to live with, others from similar linguistic or ethnic backgrounds. Hence, the older style of close-knit working class community is apparently being replaced in industrialized countries by similar types of community created by newer immigrants. Dabène and Moore (1995) describe the supportive function of such migrant networks during the period when immigrants are developing resources to integrate more fully into urban life.

The type of close-knit network structure which seems to help maintain community languages is therefore by no means a residue of an earlier type of social organization; not only immigrants, but also long-term stigmatized and marginalized minorities, like the New York Puerto Ricans studied by Zentella (1997), construct personal communities which function as powerful support systems in a hostile environment. Gal (1978) and Li (1994), whose work is discussed in more detail below, have correlated observed patterns of language use with specific network patterns in much the same way as researchers working in monolingual communities. Indeed, Gal explicitly compares her model of language shift to a variationist model of language change, in being both gradual and rooted in synchronic patterns of variation in language use. Zentella also adopts a broad variationist perspective, but like Gumperz (1982), uses the concept of network informally and non-quantitatively.

Gumperz's (1982) account of the Slovenian/German bilingual community in a remote part of Austria's Gail Valley associates the move towards monolingualism with economic changes. Members of this poor and socially stigmatized farming community had traditionally been embedded in classic close-knit networks of mutual support which linked them in many capacities – as co-workers, neighbors, and friends who socialized together within the boundaries of their community. However, such behaviors changed as the economy shifted from a dependence on subsistence farming to a primarily service economy. Improvements in the road system gave rise to a host of other changes which affected network structure and, ultimately, language behavior followed. Farmers sold produce to incomers and to factories rather than dealing with other local farmers; farm buildings were converted into tourist accommodation for the many visitors entering the area; work and leisure activities were no longer confined to the immediate locality. As many day to day interactions came to be with urban outsiders, villagers lost their reliance on the local support network. Although of course local conditions give rise to variations, the pattern Gumperz describes here appears to be a very general one in much of western Europe (and probably elsewhere in the developed and developing

world). Ó'Riagáin's (1997) description of a series of studies carried out in Ireland between 1973 and 1993 suggests a situation broadly similar to that in the Gail Valley where change to a service economy triggers associated change in personal social network structures. Consequent changes in the categories of individual involved in face-to-face encounters shifted the balance from bilingual Irish-speaking insiders to monolingual English-speaking outsiders, inevitably resulting in the further decline of Irish.

Gal's (1978) analysis of language shift in the bilingual German/Hungarian community in Oberwart, Austria, identifies similar triggers. Individuals are measured in terms of the relative "peasantness" (a local social category) of their networks. This variable operates differently for men and women (recall this pattern in other network studies) but is found to correlate more closely than individual peasant status with patterns of language choice. Like the Gail Valley and the Irish Gaeltacht, Oberwart had been bilingual for several centuries, and again, changes in network structure are associated with higher-level economic changes. We now turn to Li's (1994) and Zentella's (1997) work in immigrant communities where typically pressure to assimilate to the monolingual norm of the host country is intense and, in contrast to the communities discussed above, a pattern of language shift over three generations is common. Grosjean (1982) and Jørgensen (1998) describe these pressures in the United States and Europe respectively.

Despite a general sense that Spanish in the United States is resistant to shift (Bourhis and Marshall 1999) Zentella provides evidence of this three-generational shift pattern in a Puerto Rican community in New York City (*el bloque*). In an account which is compiled from long-term participant oservation, she notes some characteristic sociolinguistic patterns. First, while choice of code is heavily network-dependent, several distinguishable varieties of both Spanish and English give rise to multiple-code repertoires (Zentella 1997: 48). For example, while youngsters and young mothers have access to a range of Spanish and English codes, they favor a Puerto Rican variety of English. Older men and women however prefer Puerto Rican Spanish, while "young dudes" favor African-American Vernacular English but also have access to varieties of Spanish and English. Many of the children speak very little Spanish, mixing Spanish into their English to produce the code popularly described as *Nuyorican;* interestingly, only one child in Zentella's sample is monolingual in English. Patterns of code choice from this multidimensional repertoire are thus systematically associated with a range of distinctive gender- and age-related networks.

Zentella comments on the significance of what she describes as "the Puerto Rico language learning connection" in offering an explanation of the strength and persistence of Spanish in New York City and elsewhere in the United States. She cites the combined effect of continuing network ties of immigrants to individuals in adjacent Spanish-speaking countries of Latin America, and cyclic patterns of immigration (see again Bourhis and Marshall 1999). This Puerto Rican connection (and its counterpart in other Spanish-speaking communities in the United States) may explain why young people use a mixed

Spanish-English code; in accordance with the expected pattern of language shift in immigrant communities, they have shifted substantially to English monolingualism but still need to communicate with Spanish monolingual speakers.

Li (1994) and Milroy and Li (1995) report an investigation of social trajectories of language shift which associates different network types with variable patterns of language use. However, they describe a much less complex community repertoire than Zentella, providing a quantitative analysis of both network types and language patterns. Three migrant groups are distinguished, overlapping with (but not exactly corresponding to) a grandparent, parent, and child generation. Each group contracts characteristically different types of network ties, the first associating mainly with kin, the second chiefly with other British Chinese, and the third more extensively with non-Chinese peers. Variable network patterns were in turn correlated with seven different patterns of language choice, where English and Chinese were used either monolingually or in different combinations. Following Milardo (1988), interactive and exchange networks were distinguished, corresponding roughly to "weak" and "strong" types of tie.

Since the Chinese in Tyneside did not live within a specificable neighborhood, assessments of network strength could not be based on the territorially restricted strong ties as in several of the studies reviewed in the previous section. Instead comparative analysis of individual exchange networks was based on a list of up to 20 persons who constituted significant and regular contacts for each individual, adapting the procedure described by Mitchell (1986). These sets of 20 could then be compared on relevant dimensions – for example, different ethnic compositions. Not surprisingly, the strongest ethnic networks were associated both with the oldest generation and with the most extensive use of Chinese, and the weakest with the British-born generation and with the most extensive use of English. There were, however, many subtleties associated with different network patterns within each group; particularly interesting is the role of the True Jesus Church, one of the community's institutions.

Li (1995) suggests the raison d'être of this church to be a support mechanism for cultural and socialization activities rather than a religious institution, noting that member families were distinctive in having contracted pre-migration network ties on the island of Ap Chau, close to Hong Kong. He further documents a very much stronger pattern of Chinese language maintenance amongst the young British-born members of the True Jesus Church than amongst the young community as a whole, a pattern attributed to the strong ties maintained by True Jesus youngsters with church members monolingual in Cantonese. Interestingly, Li also notes a pattern of fluent Cantonese/English code mixing as characteristic of the True Jesus teenagers, which he explains in much the same way as Zentella (1997) explains widespread Spanish/English mixing by New York City Puerto Rican youngsters. In both cases the young people have come up with a similar solution to a similar problem; proficiency in the community language is limited, but they maintain network ties which require them to communicate with non-English speakers. Thus, a network analysis can help

explain not only the social trajectory of language shift, but specific patterns of code switching (see also Labrie's (1988) network-based account of code switching by Italians in Montreal).

4 Weak Ties and Theories of Language Change

Social network analysis has most commonly been employed in communities where ties between speakers are generally strong. While studies such as those reviewed above show that it is relatively straightforward to operationalize the network concept in this way, how to handle socially and geographically mobile speakers whose personal network ties are not predominantly dense or multiplex is much less obvious. In fact, network-based accounts of such speakers are rare, and the only study examined so far which has attempted anything like this is Bortoni-Ricardo's (1985) account of the progressive urbanization patterns of Brazilian rural migrants. Geographical and social mobility is, however, the rule rather than the exception in contemporary cities, and an increasing amount of work carried out by variationists within dialect contact frameworks focuses on such speakers (see for example Trudgill 1986, Trudgill and Britain forthcoming, Chambers 1995: 52–65, Kerswill and Williams 2000). Chambers (1992) points out that sociolinguistics as well as dialectology is quite generally oriented to non-mobile speakers in isolated communities; the focus of network studies over two decades has reflected this orientation.

At a purely operational level, loose-knit networks are hard to work with. Analysis of close-knit networks involves comparing speakers who differ from each other in certain respects (for example, multiplexity of ties contracted at the workplace) but are still similar enough in other relevant ways for a comparison to be meaningful. But it is difficult to see how the loose-knit network structures of individuals who differ from each other in many different respects (educational level, occupation, region of origin, mobility inter alia) might meaningfully be compared with each other. This problem was noted in the Belfast suburbs of Andersonstown and Braniel (Milroy 1987b: 108) and was encountered also in an attempt to apply social network analysis in the prosperous Berlin suburb of Zehlendorf (Dittmar and Schlobinski 1988). However, from the perspective of a person who has changed employment and place of residence several times, the networks of speakers studied in Belfast, Detroit, and Grossdorf are all close-knit, and might be compared in a general way with those of more mobile speakers (see Kerswill and Williams 1999).

To identify these operational difficulties is not to suggest that loose-knit networks are uninteresting to the variationist: quite the contrary. For if a close-knit network structure supports localized linguistic norms and resists change originating from outside the network, the corollary, that communities composed of weak ties will be susceptible to such change, is also likely to hold. Following Granovetter's (1973) argument that "weak" and apparently insignificant

interpersonal ties (of "acquaintance" as opposed to "friend", for example) are important channels through which innovation and influence flow from one close-knit group to another Milroy and Milroy (1985) have proposed that linguistic innovators are likely to be individuals who are in a position to contract many weak ties. Since such weak ties link close-knit groups to each other and to the larger regional or national speech community, they are likely to figure prominently in a socially accountable theory of linguistic diffusion and change.

Milroy and Milroy (1985) argue that a "weak tie" model of change can account rather generally for the tendency of some languages to be more resistant to change than others (Icelandic vs. English, or Sardinian vs. Sicilian, for example). They suggest that a type of social organization based on overlapping close-knit networks will inhibit change, while one characterized by mobility (for whatever reason), with a concomitant weakening of close ties, will facilitate it. Grace (1992) explains in a similar way some puzzling developments among the Austronesian languages, which show widely differing patterns of susceptibility to change inexplicable in terms of traditional assumptions (see also Grace 1990). As well as explaining different large-scale linguistic outcomes by comparing different types of social organization, the weak tie model can account for specific problematic examples of change, of which two are considered below.

Innovations have been widely observed to skip from city to city, bypassing intervening territory. This appears to be the pattern of the Northern Cities Shift, a vigorous change in vowel systems affecting cities of the northern USA from western New England to an unspecified point westward (Labov 1991, Wolfram and Schilling-Estes 1998: 138). On the other side of the Atlantic, Trudgill (1988) notes the relatively recent adoption by young speakers in Norwich of a merger between /f/ ~ /θ/ and /v/ ~ /ð/ (as in *fin ~ thin; lava ~ lather*). Milroy (1996) subsequently documents this merger by young working-class speakers in the northern English cities of Sheffield and Derby, and Stuart-Smith (1999) reports its recent appearance yet further north in Glasgow. As it saliently indexes working-class London speech, this change, in the British context, appears to be contact-induced rather than to originate from within communities. While attributing its rapid spread to Norwich to greater mobility and contact between speakers, Trudgill points out that the teenagers who use the merged variants are less mobile than their seniors and tend to contract close ties locally. For this reason, it is hard to explain the precise mechanisms of diffusion in terms of close contact between London and Norwich speakers. The same objection can be made even more tellingly since this very vigorous change has extended across large areas of urban Britain in the years since Trudgill's observations of its spread to Norwich. A weak tie model would however predict its diffusion from one community to another through multiple weak ties; in fact, Trudgill suggests tourists and football supporters as individuals who might be implicated in the diffusion process (1986: 54).

A second problematic case of change to which a weak-tie model offers a principled solution involves the alternating phonolexical variable (u), as in

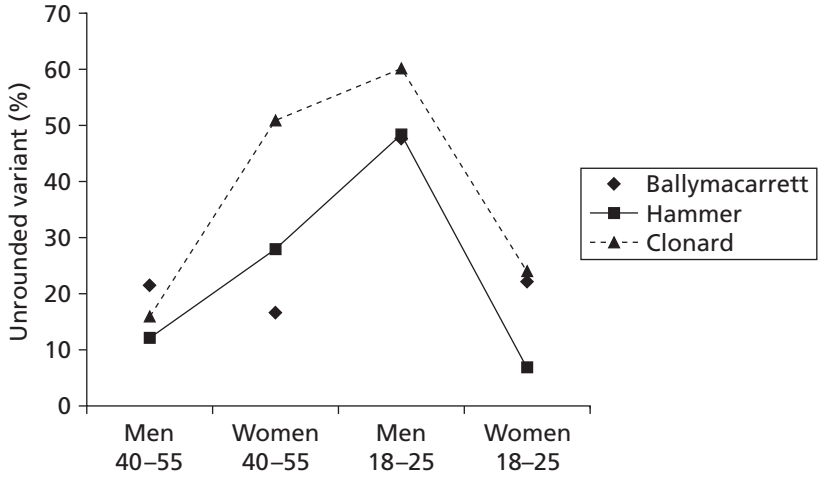

Figure 22.4 The distribution of (u) by age, gender, and neighborhood in Belfast

pull, push, foot, discussed in detail by, for example, Milroy (1987a) and Milroy (1992). A rounded and an unrounded vowel variant appear in a lexically limited set, the unrounded variant strongly indexing working-class identity.

Figure 22.4 provides clear evidence of cross-community consensus between young (but not middle-aged) speakers on the use of these alternative realizations to index gender also in the three working-class communities of Ballymacarrett, Hammer, and Clonard. However, the fact that middle-aged Ballymacarrett speakers use (u) to index gender in much the same way as younger speakers in all three communities suggests that the change is diffusing from Ballymacarrett. The problem is this: how has this change crossed the notorious sectarian lines of demarcation in the Belfast of the 1970s, since the civil disturbances which began during the childhood years of these young speakers prevented them from contracting close ties across the sectarian divide? Older speakers, who report having contracted many cross-community ties prior to the civil disturbances, display no cross-community consensus on the use of (u). The age-related pattern of this change is puzzling if we adopt the commonsense assumption that innovations are transmitted via strong ties (for such a model, see Labov 1980: 261; Labov and Harris 1986), but not if we assume that the conduits of innovation are the multiple weak ties of everyday urban interaction in the neutral areas outside close-knit community territories (for further discussion of this issue, see Milroy and Milroy 1985).

Although it may at first seem counter-intuitive, a "weak tie" model of change is plausible for several reasons, as suggested by Granovetter (1973). First, persons central to a close-knit, norm-enforcing group are likely to find innovation of any kind socially risky, but the adoption of an innovation already on the

fringes of the group less so. Second (in the networks of mobile individuals at least), weak ties are more numerous than strong ties, providing links to many more individuals; consider, for example, the ties set up by participants at academic or business conferences, which link cohesive groups associated with each institution and provide conduits for new ideas and information. Conversely, information relayed through strong ties tends not to be innovatory, since strong tie contacts are likely to be shared (that is to belong to overlapping networks). Thus, mobile individuals who have contracted many weak ties, but occupy a position marginal to any given cohesive group, are in a favorable position to diffuse innovation. Interestingly, this argument is consistent with the traditional assumption of historians of language that the emergent, mobile merchant class were largely responsible for the appearance of northern (and other) dialectal innovations in Early Modern London English (see, for example, Baugh and Cable 1978: 194). Using standard variationist methods, historical sociolinguists have begun to examine systematically the social trajectories of such earlier changes with attention to the effects not only of social network, but of gender and social status, with promising results (Nevalainen 1999, Nevalainen and Raumolin-Brunberg 1996, Tieken-Boon van Ostade et al. in press). Sociohistorial linguistics continues to develop as a significant subfield of variationist theory.

5 Social Network, Social Class and Mobility

The weak tie model of change discussed above can illuminate the dynamics of dialect leveling – that is the eradication of socially or locally marked variants (both within and between linguistic systems) in conditions of social or geographical mobility and resultant dialect contact. Leveling might reasonably be viewed as a linguistic reflex of the large-scale disruption endemic in the modern world of close-knit, localized networks which have historically maintained highly systematic and complex sets of socially structured linguistic norms. Such disruption arises from (for example) internal and transnational migration, war, industrialization, and urbanization. While these dynamics have operated earlier and more intensively in colonial contexts, as discussed by Chambers within a broad social network framework (1995: 57–66), they continue to affect geographically or socially mobile populations. In any event, leveling gives rise to homogenization and a tendency for the localized norms of the kind supported by a close-knit network structure to become obliterated (Chambers 1995, Trudgill et al. 2000, Kerswill and Williams 2000, Britain 1997, Watt and Milroy 1999). This process raises interesting psycholinguistic as well as sociolinguistic issues concerning the functions of close-knit networks, which are briefly explored below.

On the basis of evidence from language attitudes research, sociolinguists generally assume an ideological motivation to underlie the long-term maintenance

of often stigmatized norms in the face of pressures from numerically or socially more powerful speech communities; speakers want to sound (for example) Welsh, Irish, Northern English, New Zealandish, Canadian, African-American, American Southern and unlike whatever social group they perceive themselves as contrasting with. The dialect loyalty of such speakers and their resistance to change originating from outside the group is usually said to be motivated by their desire to index group identity. Yet, motivations alone are insufficient to maintain nonstandard varieties reliably (see Wolfram et al. 1999 for a discussion of this issue in an American context). Relevant here is Payne's (1980) demonstration of the social conditions needed for children to learn the highly localized phonolexical complexities of the Philadelphia system; particularly, their parents needed to be locally born for such learning to take place. What this amounts to is that if a close-knit community network structure loosens and members become mobile, the social prerequisites for supporting highly localized norms disappear, and dialect leveling takes place. Thus, not only does a community's sense of distinctiveness become redundant as network ties loosen (a social and ideological issue), but from a psycholinguistic perspective speakers lack the extensive and regular input needed to maintain localized norms.

Such norms are sometimes complex; for example, Belfast speakers whose networks are relatively loose-knit reduce the number of linguistically conditioned allophones of /a/ by eliminating the extreme back and front variants characteristic of the vernacular system, often converging on a very narrow area of vowel around the centre of the vernacular range (Milroy 1982, Milroy 1999). Thus, close-knit networks may be viewed not only as social and sociolinguistic support mechanisms which facilitate the construction and maintenance of local distinctiveness; from the point of view of the language learner, they also provide the intensive input required to master complex, localized linguistic structures which lack the support of institutional models. Leveling, which from this cognitive perspective can be viewed as a simplification strategy, takes place when such input is no longer present. Trudgill (1989, 1992) and Schilling-Estes (2000) provide relevant discussions of the social conditions in which both simplification and structural complexity flourish.

We turn now to consider more specifically the links between mobility, social network structure, and social class. Following Giddens (1989: 205–73), class is viewed here as one of four systems of stratification which promote inequality in society. While the other three (slavery, caste, and estates) depend on institutionally sanctioned inequalities, class divisions are not officially recognized, and since an individual's class position is to some extent achieved, class stratification is accompanied by varying degrees of mobility. Issues of power inequalities between groups and individuals are raised in this discussion, which so far have only been touched upon.

Different types of network structure seem to be broadly associated with different social classes: loose-knit networks with the socially and geographically mobile mainly middle classes, and close-knit ties with very low status and

very high status speakers. In terms of the predictions of the weak tie model of change discussed above, this association is consistent with Labov's principle that innovating groups are located centrally in the social hierarchy, characterized as lower-middle or upper-working class (1980: 254). The question then arises of how an integrated model of change and variation might be constructed which takes account of the relationship between social class and social network structures. Such an integration is desirable, since the association of different network types with different social class groups is not arbitrary, but springs from the operation of large scale social, political and economic factors (*contra* Guy 1988, who views network and class as unrelated, but pertaining respectively to a micro- and macro-level of analysis).

Traditionally, sociolinguistics has assumed a consensus model of class, where the community is said to be fundamentally cohesive and self-regulating. Yet, the vitality and persistence of nonstandard vernacular communities highlighted by network studies is more readily interpreted as evidence of conflict and division than of consensus. Accordingly, Milroy and Milroy (1992) argue that a dynamic model of class as a process which splits the community into subgroups (characterized by different orientations to work, leisure and family) is helpful in constructing an integrated theory of variation and change. Højrup's (1983) analysis of these subgroups as characterized by different lifemodes with different network structures "falling out" from those lifemodes is proposed as an approach which links the variables of class and network in an illuminating way.

With the link between social class and network structure as their point of departure, Kerswill and Williams (1999) have recently investigated the relationship between social class, mobility, and susceptibility to change by comparing the language behavior of low and high mobility speakers of different social statuses in the English towns of Reading and Milton Keynes. They conclude that network structure has the predicted effect – that is, close-knit networks maintain localized norms, while loose-knit networks facilitate change. However, they argue that the variables of class and network need to be considered independently, given the different language behaviors of mobile high status and mobile low status groups.

While the relationship between class, network, and mobility is evident, its precise character is as yet unclear as are the linguistic outcomes associated with interactions between these social variables. However, since they are constructed at different levels of abstraction, it is likely that a two-level sociolinguistic theory would be helpful. Such a theory should link the small-scale networks where individuals are embedded and act purposively in their daily lives with larger-scale social structures which determine relationships of power at the institutional level. The different sociolinguistic patterns associated with both strong and weak ties would need to be considered, with attention to recent work on the sociolinguistics of mobility. For, while strong ties give rise to a local cohesion of the kind described by network studies of close-knit neighborhoods such as those in Belfast or Detroit, they lead also to overall

fragmentation in the wider community. Conversely, it is weak ties which give rise to the linguistic uniformity across large territorries such as that described by Chambers in Canada, Labov in the United States, and Trudgill et al. (2000) in New Zealand. The social dynamics underlying both diversity and uniformity lie at the core of an accountable theory of language variation and change.

ACKNOWLEDGMENTS

The support of the US National Endowment for the Humanities in providing me with time to carry out this work is gratefully acknowledged.

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