

Analyzing online communication from a social network point of view: questions, problems, perspectives

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1. Introduction

This programmatic paper investigates the possibilities, chances, and risks of analyzing personal and professional online communication from the point of view of interactional sociolinguistics combined with modern social network analysis (SNA). Thus, it has two complementing goals: One is the exploration of adequate, innovative concepts and methods for analyzing online communication, the other is to use online communication and its ontological and functional specificities to enrich the conceptual and methodological background of SNA. The paper is organized in two parts. It begins with an introduction to recent developments in sociolinguistic social network analysis. Here, three interesting new concepts and tools are discussed: latent versus emergent networks (Watts 1991), coalitions (Fitzmaurice 2000a, Fitzmaurice 2000b), and communities of practice (Wenger 1998; Eckert 2000). Part two then describes various types of online communication in personal and professional contexts from a social network point of view. In particular, this part addresses methodological and theoretical pros and cons of SNA with regard to online data.

2. Recent developments in sociolinguistic social network analysis

Social networks as a very intuitive concept have been used in sociolinguistic studies for a very long time, probably more than fifty years, but they only gained general currency as a solid methodological tool with the publication of Lesley Milroy's groundbreaking study of Belfast English (Milroy 1980; for an overview and history of SNA, see Bergs 2005: 22-30; Schenk & Bergs 2004). The very basic assumption is that entities do not exist in isolation or as free members of individual groups, but that every element is somehow elementarily

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linked to other elements in the system. This seems to be obviously true for humans (who live in close contact with each other), but it is also true, in a technical sense, for many inanimate entities such as cities, subways, and also computers. When elements and their links are simply plotted, the resulting pattern is one of ‘dots-and-lines’, as in Figure 1.

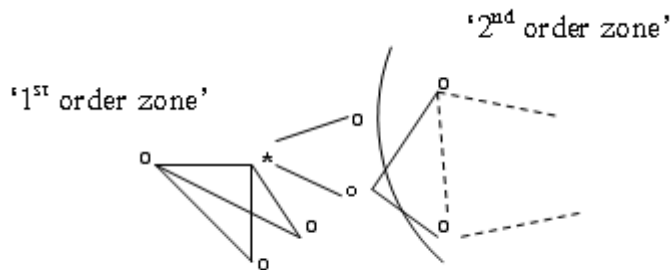


Figure 1. The ‘dots-and-lines model’ (based on Bergs 2005: 25)

A number of empirical criteria can be applied to measure the structural and content features of a given network, such as the one in Fig. 1. These include, for example, density, centrality, and clusters as structural criteria, and transactional content, multiplexity, and reciprocity as content criteria (cf. Bergs 2005; Schenk & Bergs 2004; for an extensive discussion and list of further calculations, see Boissevain 1987; Jansen 1999; Scott 1997; Wasserman & Faust 1994). A number of studies in both sociology and sociolinguistics have pointed out that particular network ties and structures can have significant effects on the behavior (including linguistic behavior!) and attitudes of the participants in the network. Granovetter (1973, 1982), for example, introduced the important distinction between “strong ties” and “weak ties”. Strong ties are characterized by high transactional content, high frequency, a high degree of reciprocity, weak ties by the opposite. Conversely, strong ties foster higher frequency, a higher degree of reciprocity, and generally higher transactional content. In his work, Granovetter points out that dense, multiplex networks with high transactional content, and therefore many strong ties, tend to generate and enforce uniform network norms, while loose, uniplex networks with low transactional content, and therefore

generally weaker ties, are more tolerant towards non-conformity with network norms, i.e. “deviant” behavior. With this background, Granovetter’s theory of strong and weak ties has been particularly fruitful in its application to language variation and change in social networks (cf., e.g., L. Milroy 1980, 2002; L. Milroy & J. Milroy 1985; J. Milroy 1992). Social network analysis has sometimes been described as “orientating statements” (Homans, cited in Barnes 1972: 2-3), particularly in sociolinguistics where it has been called “a set of procedures rather than a fully-fledged theory” (L. Milroy 1987: 46). The point is the SNA is and should be methodologically (and theoretically) open and flexible, since measurements and criteria for social networks may have to be adjusted for different research question as well as for different regional, social, or temporal (perhaps even medial) environments. In other words: factors that have been identified for 20th century Belfast need not apply, at least to some extent, to 15th century Norfolk (Bergs 2005), 17th century Navarro (Imhoff 2000), or 20th century Brazil (Bortoni-Ricardo 1985), and vice versa. In fact, it has been argued that in some cases the normative pressures of open and closed networks may be reversed. While it is generally assumed that open, loose-knit networks in 20th century Western Culture lead towards greater standardization (since close-knit networks are ‘sealed off’ against outside pressures and can more easily maintain their own distinctive, perhaps non-standard group norms), these very same networks in pre-standardized linguistic communities, like, for example, 15th century England, may have led to exactly the opposite. Since there was no general ‘outside pressure’ to use a standard, speakers in open, loose-knit networks must have felt much more at ease when adopting a particular form or structure depending on the people they spoke to. Speakers in close-knit networks, on the other hand, were less flexible and maintained their ‘local standard’ (Bergs 2005: 26).

The network concept has also seen some important modifications and innovations since the 1980s. Watts (1991) and Fitzmaurice (2000a, 2000b) have introduced two
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important, but unfortunately rather neglected concepts for SNA from an interactional rather than a correlational perspective. Most, if not all network studies in sociolinguistics have focused on correlative aspects; Watts (1991) takes a more interactional view and analyzes power in family discourse from a SNA perspective. He distinguishes between *latent* and *emergent* network structures, which seem to have different repercussions on the communicative behavior of the individual speakers. Latent network links are principally always there, and can be activated, but they are usually dormant (e.g., relationships to parents, which may not be active for a long time, but which are still factually there, and potentially influential). Emergent network links evolve dynamically and have to be negotiated in every new communicative situation. “The essential point about an emergent network is that it refers to the interpersonal links established, maintained and altered *in the process of interaction itself*. Emergent networks arise out of the ongoing discourse, and the interpersonal links are perceived by the members while they are being established.” (Watts 1991: 204, emphasis original).

It is here that most power and solidarity phenomena emerge. Occupying a central (‘anchor’) position in such an emergent network, for example, means that the network participant can principally control the topic in network discourse, but it also implies face-work, i.e. potential gains in positive face or face loss: “There is, in other words, a certain risk involved in tabling topics and putting positions” (Watts 1991: 173). And this is probably why (linguistic) innovations in traditional face-to-face networks rarely originate in central participants, but rather in marginal members and through bridges to other networks. On the basis of this distinction between emergent and latent networks, Watts also makes an interesting prediction, which will later on be applied to online discourse networks (ODiNs): “[...] individuals are interested in preserving their perceived self-image, their face, and enhancing it during the interaction, if possible. If the emergent network is a closed

communication system generated from a close-knit latent network, we may also assume that the participants are interested in maintaining the equilibrium of interpersonal relationships” (1991: 156).

One of the most challenging problems in SNA is determining the total size of a given network and taking this factor into account in describing the behavior and attitudes of individual network members. In her study of the eighteenth century journal *The Spectator* Fitzmaurice (2000a, 2000b) introduces the concept of *coalitions* (cf. Boissevain 1974) to network studies in sociolinguistics in order to circumvent some of the methodological problems in traditional network studies, including incomplete knowledge of the whole social group, i.e. network. Coalitions are dense clusters in networks which are intentionally formed by network actors solely for particular purposes or situations, and which may substantially influence both their members and external participants. “This highly restricted focus provides a reasonably controlled environment in which to seek the manifestation of influence” (Fitzmaurice 2000a: 274). Another important aspect is the factor of intentionality or consciousness. Many network studies do not discuss these notions and take network links as such for granted. Fitzmaurice’s study and the notion of coalitions focus the attention on the conscious aspects of networking, i.e. people forming and canceling network ties consciously sometimes even for specific purposes and in the face of (potential or actual) conflict between network actors. Some of Fitzmaurice’s examples are the coalitions formed around Joseph Addison. Addison was the key figure behind the early eighteenth-century periodical *The Spectator*, one of the most popular periodicals at the time. People like Alexander Pope, Richard Steele, and Jonathan Swift gathered around Addison for the sole purpose of being associated with the *Spectator*. After the *Spectator* project ended in 1714 with the publication of a collected edition, some of these relationships were maintained as friendships (Addison and Steele), while others were terminated: Some of the relationships

were “coalitions rather than alliances, because of their formation in conditions of conflict (political conflict in the case of Swift and Steele) or competition (Swift and Pope), which similarly have limited lives in terms of their outcomes” (Fitzmaurice 2000: 274-275).

Another sociological concept that is based on social networks and which is closely related to coalitions is so-called *communities of practice* (cf. Lave & Wenger 1991; Wenger 1998; Eckert 2000: 34-41): “A community of practice is an aggregate of people who come together around some enterprise. United by this common enterprise, people come to develop and share beliefs, values, ways of doing things, ways of talking,— in short, practices – as a function of their joint engagement in activity. Simultaneously, social relations form around the activities and activities form around relationships” (Eckert 2000: 35). Communities practice (henceforth COP) thus resemble coalitions in as much as they focus on voluntary association of people for specific purposes; coalitions and COPs are dynamic network and speech community concepts, since both need be negotiated on a continual basis. However, whereas coalitions are solely purpose-based and often originate in the face of overt antagonism among coalition forces, COPs unite their members and lead to greater uniformity. Membership in a coalition is defined by the pursuit of the same specific goal, a COP is defined both by (formal) membership and by shared practice, i.e. members develop similar cultural practices and meanings: “The value of the construct *community of practice* is in the focus it affords on the mutually constitutive nature of individual, group, activity, and meaning” (Eckert 2000: 35). It will be shown later on how both coalitions and COPs can be helpful tools and concepts in investigating online communication.

3. Online communication and social network analysis

Computer networks are prime examples of (social) networks (cf. Wellman 1997; Paolillo 1999). Paolillo (1999), for example, uses the concept of SNA to investigate language variation on Internet Relay Chat (IRC). He shows that language use on both a macro and a

micro level can depend on the embedding of the individual in specific networks. In his study of the IRC channel #india, he finds language variation on a macro level (the use of Hindi and other Indian languages versus English), and on a micro-level (the use of the variables “r”, “u”, “z”, and obscenity in English). “R”, “u”, and “z” are orthographic variables and refer to the systematic representation of “are” as “r”, “you” as “u”, and “-s” as “-z” (e.g., “seemz”). “Obscenity” refers to the use of obscene language of any kind. On the basis of log-data which allow for the detailed study of frequency of interaction (see below), Paolillo was able to identify 13 (sub)groups of speaker-addressees who were in more or less frequent contact with each other. These groups were then statistically correlated with the five linguistic variables. The results are shown in Fig. 2. It becomes clear that the identified groups seem to form what has been called communities of practice, i.e. they are defined and define themselves by both formal social network ties (actualized through frequency of interaction) but also through their use of sociolinguistic variables of social symbols. Groups J, F, B, G, for example, do not use “r” and “u”, G and F are united by “obscenity”, J, G, B are linked through the use of Hindi. Group J is particularly interesting since it acts as a bridge between several different communities and is characterized both by the use and the non-use of Hindi, depending on the specific addressees.

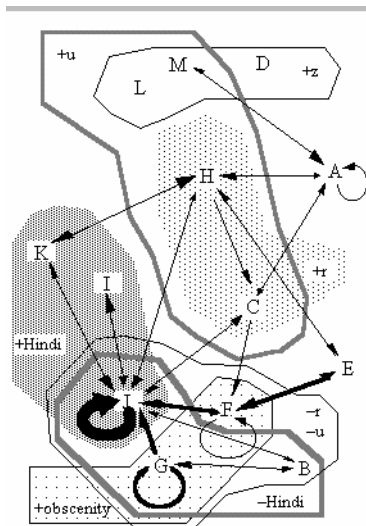


Figure 2: Interaction among participant groups and its relation to the linguistic variables.

Paolillo (1999)

On the one hand, the wired hardware is one of the best visual representations of the ‘dots-an-lines’ model (see Fig. 1 above). On the other hand, however, we have online networks, i.e. human individuals linked through these (factual) computer networks. These individuals do not necessarily use one computer each, so that the hardwired structures cannot be used in this case as straightforward measurements of the individuals’ networks. Nevertheless, the fact that these speakers communicate through computer (online) networks makes their communicative and social behavior easily measurable. With online data (e.g. networking protocols, logfiles, emails, chat, mud, and moo scripts) available we know exactly who talked to whom about what for how long. This is something that research on spoken language can rarely, if ever, achieve through interviews, questionnaires, and the like. So far, there are practically no sociolinguistic studies available that trace and monitor speakers’ movements and communicative behavior 24/7 for an extended period of time. Research based on online communication, in contrast, has few, if any, methodological problems in recording and analyzing long stretches of social and linguistic interaction in

chatrooms, on message boards etc. over very long periods of time. And since this behavior is automatically continually recorded, there is virtually no risk of missing something.

Studying online communication from a social network point of view has a number of additional interesting aspects. But first we need to make a general distinction among three ontologically different network types:

1. Pure offline networks
2. Pure online networks
3. Mixed online/offline networks

Offline networks are basically traditional social networks, mainly generated and maintained in and through face-to-face communication. This means that, as a rule, these networks are local, short-distance. There may be some component of offline long-distance communication through telephone and letters, for example, but this can be treated as the exception and will not be discussed here in any detail. Online networks, on the other hand, do not have any “real-life” component, i.e. network participants do not know each other outside their online relationships. These networks are often, but not always, non-local, long- or medium-distance. But since chatrooms, for example, do not automatically give geographical (or any personal) information on their members, these networks could in principle also be very local without network members knowing each other offline. Finally, mixed networks have both online- and offline relations, i.e. these people know each other both online and in face-to-face-communication, albeit possibly to varying degrees. For present purposes it does not matter whether these relationships originated online or offline, or which of the two is stronger – though these questions are certainly worth further investigation. As regards professional discourse all three network types are possible, though offline and mixed networks are probably most frequent. In the present paper, professional communication is understood to include communication in economics, administration, law,

and education. In all these fields, networks are (still) established offline. Members of many school classes, for instance, even at high school or college level only know each other offline; many administrators only know each other offline and through the telephone but do not have online-based communication networks. On the other hand, many of these groups have both online and offline networks simultaneously (one of the prime examples is probably university education and law). Some groups only know each other online, for instance through email, but have never met each other in person (but this seems to be a minority of cases). Some sociologists and sociopsychologists have expressed their concerns regarding the impact of online communication on traditional face-to-face interaction and networks (in the sense of 'communities', cf. Yus 2005, esp. 82-83). Wellman (1988), discussed in Yus (2005), presents three different types of reading communities with regard to (the absence or loss of geographical proximity):

- Community Lost: "The large scale social changes, mass society, urbanization and an increasing bureaucracy reduce the possibilities to create and maintain communities. Only formally organized meetings are possible" (Yus 2005: 83)
- Community Saved: "Irrespective of external changes in society people create communities in those forms that the technical and social changes allow" (ibid.)
- Community Liberated: "Communities are created without need of any reference to geographical boundaries and maintained thanks to better means of transport and communication systems." (ibid.)

Quite obviously, Community Lost is the pessimistic picture in which people are more and more individualized and isolated. Community Saved seems to be the middling way between the bleak picture of Community Lost and the more optimistic view in Community Liberated; people try to create and maintain necessary communities as far as possible. Community Liberated, on the other hand, is the picture we get with online communication of various sorts. People form ties, networks, communities, but these are no longer necessarily characterized by geographical, physical proximity. However, as Yus (2005) also *Language@Internet* SV1-3/2006 (www.languageatinternet.de, urn:nbn:de:0009-7-3712, ISSN 1860-2029)

points out, this does not mean that there is no sense of space (i.e. ‘geography’ in the widest sense) in online networks and communities. Very often we see the metaphorization of electronic environments as physical spaces; a number of studies have discussed spatial deixis and reference to physical space in muds and moos, other studies have pointed out the use of spatial expressions in talk about online features (e.g., “enter and leave a homepage”, Meyer et al. 1997). Also, it has been shown that some online ties are qualitatively no different from offline ties, i.e. they can sometimes show a very high degree of transactional content, e.g. through exchange of information, support, and trust. In fact, some online ties have even led to offline marriages – perhaps the clearest sign that online ties need not have low transactional content. The same holds true for density, multiplicity, clusters, and virtually all other network criteria. This means that there is no clear correlation between online versus offline communication on the one hand, and close-knit network structures (‘communities’) versus loose-knit network structures on the other. Online communication may lead to and be based on strong, close-knit networks, while off-line networks can be very shallow and loose-knit – despite the frequent jeremiads brought forward by technology pessimists. Moreover, it can also be argued that “the internet” and other modern electronic bidirectional media have led to increase in communication and to an increase in network sizes. Speakers have more contacts and these contacts cover a much wider area of ground. The introduction and spread of short messaging on mobile phones has not led to a decrease in communication and an increase in social isolation, but rather to the opposite: teenagers talk more and more often to each other and even to their parents and teachers. Couples have reported an increase in interpersonal intimate communication with short messaging (cf. Kessler & Bergs 2003; Döring 2003). In professional contexts, there is a growing number of meetings, workshops, and conferences around the world; airlines are selling more

business class flights than ever. This clearly contradicts the idea that online communication actually endangers personal communication.

There is a very interesting interplay between networking and communication in online environments, which has only been mentioned in passing. Online networks are very interesting for linguistic analyses simply because they are solely based on verbal, linguistic cues. While offline networks are based on and influenced by a multitude of extra-linguistic factors, online network participants only know each other by what they actually say or don't say. In a pure online network there are practically no nonverbal cues to social identity; hence everything is of great importance for linguistic analyses. Even the fact that some participants do not directly participate or cooperate in a given network can be meaningful from an interactional point of view. Hence, the suggestions by Yus (2005: 91) and Klang & Olsson (1999) – discussed by Yus (ibid.) – that some degree of commitment and active participation is the *conditio sine qua non* for membership in a virtual community need to be taken with a pinch of salt. If we take Watts's (1991) distinction between latent and emergent networks into account, we may conclude that some members of a given virtual community enter into emergent networks, namely when they are actively involved in the communicative act(s), while others are part of the latent network established here. The latter are bystanders or perhaps even eavesdroppers in the technical discourse analytic sense, but these can, nevertheless, be very important for the discourse itself and its analysis from an interactional point of view. One of the best examples comes from educational online discourse: obviously, it makes quite some difference if the educator is a (silent) participant, i.e. part of the latent online network, in an online discussion group for a given class, or if the participants (the educans) know that the educator is not eavesdropping. The same may in principle hold true for interactive online knowledge management tools in companies, law firms, or government agencies, for example.

Another important issue that needs to be pointed out in this context is the role of language variation and the mechanism of language change in online social networks. While it is generally accepted that dense social networks with strong ties in face-to-face interaction are local norm-enforcing mechanisms, so that loose-knit social networks with many weak ties show more features of standard languages, this does not seem to be the case in online networks. Berman (2006) presents the example of online non-native legal discourse. Paolillo (1999) points out that the interplay of tie strength and linguistic variability on the #india IRC channel is much more complicated than originally expected. Paolillo identifies different “vernacularizing linguistic variables” and shows that these are not uniformly spread across the whole network, but that these are localized in different areas of the network (possibly in clusters or (sub-) communities of practice). Also, it needs to be acknowledged that language variation in online communities, particularly with younger speaker-writers, seems to play a different role than in face-to-face interaction. While linguistic innovation is often regarded as a threat to the role central network member in traditional SNA, innovation may often be the decisive advantage of the key figure in online communication. This is partly matched by recent studies in US youth culture, where it was shown that central network members need to innovate and actualize their behavior frequently in order to stay ahead of their ‘followers’ (*Der Spiegel* 2005/39: 96). When innovations become the norm, the actually observable functional phenomena in networks change. Dense, close-knit networks are still – obviously – norm-enforcing; but since innovation is the norm, innovations now come from within, from the central network members, not from bridges or marginal positions.

4. Summary and conclusion

The sociolinguistics concepts introduced in this paper (emergent versus latent networks; coalitions; communities of practice) can be productively applied in a number of different ways. On the one hand, they may be used to describe and analyze personal and professional *Language@Internet* SV1-3/2006 (www.languageatinternet.de, urn:nbn:de:0009-7-3712, ISSN 1860-2029)

communicative behavior online. On the other hand, they may be put to use in creating certain online environments for specific purposes. Such purposes include educational networking (see Bensoussan et al. 2006; Berman 2006) and also knowledge management. The distinction of emergent versus latent networks is one of general importance and needs to be considered in almost any kind of communicative context. What needs to be explored in the future is the logical relationship between online and offline networks, and also if one can act as latent for the other, and vice versa. Another topic for investigation is how social roles are negotiated in mixed online/offline networks, for instance, at the workplace. It has frequently been shown that speakers are much more talkative and open-minded when they are online (Döring 2003). This can be of great importance for the development of intra-company communication patterns. While coalitions may be of greater importance in the professional context, where they can be used as a project and knowledge management tool, communities of practice are more important and interesting in the private context. Further research is needed on how communities of practice develop over time and how exactly network roles and norms gradually develop, particularly when network actors do not know each other face-to-face, but only online. How does power and solidarity develop in such a network? Studying online communication from the viewpoint of interactional sociolinguistics combined with social network analysis can be extremely valuable in these cases, since online networks are based solely on language, and this linguistic behavior is continuously recorded in the greatest possible detail.

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