

Networks out of Systems

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There is considerable overlap between network theory and systems theory. Both adopt a relational perspective and thus reject sociological accounts that take for granted elementary units such as individuals or actors, and both are concerned with complexity as a result of an abundance of possible connections. A system may indeed be conceived as an ordered network of relations, blurring the distinction between system and network. However, network theory remains committed to a structuralist research programme focusing on identifying and modelling patterns of social *relations* while systems theory reconstructs structure from its function in and for social systems that consist of specific *operations*. In this paper I explore how networks as social structures may be conceptualized from a systems perspective. I do not aim to substitute systems theory for network theory or vice versa. Rather, I expect that the two perspectives can produce complementary and mutually instructive insights. In particular, systems theory can contribute its dynamic analysis of social complexity beyond static patterns of ties; network theory, on the other hand, can correct systems theory’s lack of concern and concepts for social complexities between the dyad and society.

Control and complexity in ties

Ties, manifested and negotiated in stories, are the building bricks of networks. White conceives the tie as a result of identities struggling for a secure “footing” in an overly complex social environment. A story marks a certain kind of relationship, temporarily “locking in” the control efforts of participating identities and also taking cues from stereotyped repertoires of tie such as friend, lover, colleague or acquaintance. Identities thus embedded become “persons”, i.e. relatively stable points of attribution within and across network domains.

Although this scenario is quite dynamic, the precise mechanism through which identity (as the “raw” source of action) emerges and how it is transformed into actor- or personhood in social processes remains opaque. The reason is that social process itself is not elaborated beyond a general (Weberian) idea of social action as action oriented towards the action(s) of others: Thus identities “seek” control and have to take into account other identities doing likewise. White urges us not to invest the notion of control with too much intentionality. Yet it is difficult to envisage control without invoking the notion of agency or, at least, an observer deciding what to control and how. Thus, the identity which is supposed to be a *result* of social

process has to be there *right from the beginning* in order to get that process going. This essentialist trap, which seems to be built into the very notion of “relationship”, is the reason why Luhmann argued that thinking in terms of relationships (or ties) is the consequence of an “already screwed-up starting point of theorizing” (Luhmann, 1990: 197).

Luhmann’s dismissal of the tie presumes that relations can only exist between static elements – and thus entails a substantialist (mis-)conception. It is by no means necessary to stick to a simple imagery of the tie as a bond between existing individuals. A starting point for an anti-essentialist conceptualization that is very much in line with White’s intuition could be systems theory’s notion of “reduction of complexity.” It is as fundamental for systems theory as the idea of control for White: Because the world is an intransigent mess in which everything is related to everything else, any form of order begins with realizing that it is impossible to trace and represent all possible connections. Cognition and action presuppose the reduction of complexity. Yet systems do not “strive” (or struggle) for a reduction of complexity – they *are* reductions of complexity: They establish their own order of complexity to reconstruct a more complex environment. Take consciousness: No one would deny the fact that the world is far more complex than the pictures and theories that anyone may have about it. We rely heavily on heuristics to focus attention and make judgments, remember only certain events and form a rather limited set of expectations about things to come.

This reduction of complexity also applies to self-referential operations: Any system observing and describing itself can only do so if it abstracts from and thereby simplifies certain aspects while omitting others. Every social contact is a social system (Luhmann, 1984: 33) – and thus capable of “self-description”. A self-description of a tie as social system, a “story”, cannot include all (organic, mental and other) aspects of the participating individuals. Nor can it enumerate and adequately portray all actual transactions and communications. It is a summary statement and, most importantly, a *formulation of expectations about future events*: Describing a relationship as “friendship” yields different expectations about future communication (and its success or failure) than, say, describing it as “acquaintance.” Of course self-descriptions are not limited to short formulas for types of tie. But also more complicated and detailed stories or self-descriptions reduce complexity: They make some future events seem more probable than others and thus select certain relations out of a plethora of possibilities. The reduction of complexity that occurs when a tie is constituted as a self-describing social system does not determine the range of possible future events. But it defines expectations and thus what counts as a surprise (or disappointment) and what doesn’t. We may also call this “control”, but portraying the tie as struggles for control “in stalemate” (White, 2008: 63) already bears the danger of assuming more shared meaning and stability than there actually is.

Ties out of systems

If the tie *is* a social system one may ask: What *kind* of system? Systems theory distinguishes between interaction and society (Luhmann, 1975).¹ Society as the most encompassing social system certainly is not a tie; and it is debatable how much is gained by describing it as an assembly of ties, i.e. a network or a “network of networks.”² If society is regarded as the social system consisting of all communications then it is the realm in which the sources and targets, the “addresses” of communication emerge. Such “addressability” (Fuchs, 1997) is not a given but a by-product of communication.³ It is the basic mechanism through which persons are included into society or, in White’s terms, it provides the grounds for social “footings.” Society, then, would be a precondition and context for the emergence of social identities that can be joined in ties. The generalization of addressability characteristic of modern society turns it into a Small World, in which anyone can be reached through a relatively short chain of ties. But evidently not all persons are directly connected to everyone else. Ties only emerge from direct social contact and are therefore ultimately the product of – as well as a special kind of – interaction systems.

Face-to-face interactions are ubiquitous catalysts for ties, even in the limiting case of brief encounters (White, 2008: 50). The boundary criterion of interaction systems is co-presence. They emerge from the reflexive awareness among co-present participants: We perceive others as perceiving us and thus cannot help but interpret their behaviour as communication. Watzlawick’s law for such encounters states: “One cannot not communicate.” Even if one refuses to speak, one’s gestures and gazes – and even the deliberate attempt not to do anything – may be observed by others to infer something about interests and opinions. Consequently we do not only observe others, but also how they observe us. Interaction presupposes perception and awareness, and thus human beings and their bodies. But based on perception alone, we can imagine situations in which the “double contingency” inherent in social situations cannot be resolved: If ego makes her actions dependent on what alter does, and alter in turn only acts depending on what ego does, nothing might happen at all. Luhmann suggests an alternative to Parsons’ reliance on consensual norms for solving the problem of double contingency (Luhmann, 1984: 148ff.): Alter may make a first step, say, simply extend a greeting, and thereby frame the situation in a way to which ego can respond.

¹ For the purpose of this paper I neglect the third type of social systems, formal organization, which clearly represents another context for the emergence of ties (between members). I would however argue that those ties, usually understood as “informal networks”, also depend on interaction episodes.

² Luhmann objected to any conception of society in terms of individuals connected to one another because it could only result in an „octopodal theory of society“ (Luhmann, 1994: 480).

³ The extent to which addressability is restricted to, or expanded beyond, humans varies from society to society. Archaic societies, for instance, regularly include inert objects and animals as sources of communication (Fuchs, 1996; see also Luckmann, 1970).

The *social* system that emerges is a system of communication. People and their brains and bodies are not parts of the system but of its environment. Yet communication combines relation and topic: Something is said by somebody. Persons are therefore used to *attribute* communication to them. Note that this attribution is not (or: not primarily) a psychological one: It takes place in and as communication, for instance by simply asking “How do you mean that?” Such a statement refers to the distinction between information (topic, report) and utterance (relation, command), between *what* is said and by *whom*, and thus establishes that not only some information is conveyed but that someone selected that information. The combination of informational and relational aspects in communication, and in person-oriented interaction in particular, provides a fertile breeding ground for tie formation. Opportunities for repeated interaction, or “foci” as Feld (1981) calls them, are the filters that transform an abundance of possible ties into actual ties.

A tie, then, is *realized* as an interaction system. But it is not any interaction system in particular; rather, it describes the unity of a set of encounters with the same person (Schmidt, 2007). The individual interaction is thus transformed into an interaction-in-context: It cannot neglect that it is an episode in a larger series of interactions. Although it describes something both prosaic and fundamental, this concept of tie has been missing in systems theory. Interaction systems cannot be substituted for ties. However, from such a description follows that interaction is fundamental for ties. Network concepts that define ties quite loosely, e.g. in terms of affiliation networks through common participation in a movie production, miss that important point about tie constitution.

From ties to network(s)

The affinity between tie and interaction makes network theory another candidate for “micro-sociological” reductionism. But network theory is of course not only, maybe not even primarily, concerned with ties but with their concatenation into networks. If systems theory’s focus on communication and double contingency in elementary social contacts can contribute something to the analysis of tie constitution, a focus on networks helps to carry this analysis beyond the dyad. Networks allow conceptualizing social complexity more adequately than the alter-ego model. The social dimension of meaning is neither limited to the different perspectives of two persons nor is it simply the aggregate of all potential alteri. It must be understood in terms of chains of ties at variable removes, with relevance decreasing towards the infinite horizon of the Small World. From a systems perspective networks – in contrast to ties – are then (social) structures belonging to an environment or “context” rather than to the the system itself: The social context of interaction, for instance, is constituted by *absent* people, of which some are connected to the participants. The meaning of a tie between two persons is dependent on other, indirect ties (including, of course, the absence of certain ties, e.g. romantic liaisons to third persons in the case of lovers).

If we accept that ties tend to be multiplex (at least those stemming from and being based on interaction), there might only be one “network” after all, i.e. society seen from the social dimension of meaning (the Small World, as it were).⁴ In contrast to the notion of society, the network offers a perspective on the immediate local context spinning out to the global. It is a formula for traceable connections rather than an umbrella term for the social environment as such. However, there are facets of social life that do not lend themselves to a conceptualization in terms of network ties alone. The ongoing debate about the role of “culture” in networks and innovative concepts such as “netdom” indicate that networks have to be further contextualized. In particular, the specialized and differentiated realms of action and communication (be it work and play, or politics, economy, law etc.) do not seem to necessarily produce matching networks. It is difficult to see how those realms and their independence of particular network formations can be understood without a theory of communication that does not start from the strategic actions or control efforts of individuals but from the concatenation of individual communicative acts (across great distances of time and space). This is not a principal argument against network theory. It merely suggests that there is a level of communicative operations beneath networks as ongoing self-simplifications of social life that sociology cannot neglect once the notion of actorhood has become problematic.

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⁴ See also Dirk Baecker’s contribution to this symposium.