

## Networks and Boundaries

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Since its establishment in the 1970ies sociological network theory is concerned with boundaries. This mostly implicit concern comes quite naturally because the very concept of network allows to bracket the boundary problem (Wellman 1988)—only to make it even more salient. Thinking relationally means facing the problem how distinct identities, bound social entities or delimited domains emerge out of networks of relations that just don't lend easily to any concept of boundary (Emirbayer 1997). The salience of the problem notwithstanding boundaries remained only the hidden theoretical agenda of network research. But in the meantime the search for solutions has been reinforced (Abbott 1995; Eigmüller and Vobruba 2006; Lamont and Molnár 2002; Tilly 2005; Zerubavel 1991).

In my presentation I will focus on some distinguished theoretical ideas and statements of a few relational thinkers to come to grip with boundaries and their connection to networks. This connection might prove to be much closer than expected. To be able to distill the main theoretical ideas out of the body of literature I will basically use three restrictions that will guide the selection. This proceeding has two further effects. It serves to keep some of the preoccupations of social boundary research at bay which only distract us from the main subject, that is, boundaries. Additionally it serves as a discription of my own boundaries with respect to boundary research (a paltry excuse though).

My first and main restriction is to pick up for discussion only propositions that focus on boundaries explicitly. This proves of value because sociological studies on boundaries are rather preoccupied with identity than with boundaries (cf. Tilly 2004: 213-14). Without any doubt identity formation is very close to boundary setting so that any presumed identity can serve as an indicator of some boundary. Nevertheless identities and boundaries are different simply because one boundary can bring about at least two identities. (Besides, we wouldn't need two terms to indicate something that is identical.) The second restriction is to preclude the boundary specification problems of survey research (Knoke and Yang 2008; Laumann, Marsden and Prensky 1983; Scott 2000; Wasserman and Faust 1994). For the sake of data

collection researchers are forced to neglect that boundaries are highly context dependent, most of the time ephemeral and contingent on the observer observing them. In most cases it is simply assumed that boundaries delimit groups of individuals or persons. To be sure, if it is to conduct a survey this might be the only way to proceed. Yet it obscures the problem of how boundaries are specified and reproduced empirically. It furthermore decouples from network theory and even the concept of network itself. Starting with any preconceived knots—individuals or even persons—misses the point, since it is the tying and stringing of such knots that is to be explained (White 1992, 2008). The third restriction is intimately connected to the previous one. It's the concentration on assumptions that at least in principle allow for selfreference (cf. Luhmann 1995, 1997). Propositions of that kind remind us of the fact that boundary research is itself dependent on the setting, accepting, and even defending of boundaries. This brings us closer to the core of boundary processing for we don't look for specific boundaries of this or that group but for the self-similarity of societal boundaries (on self-similarity see Abbott 2001). This does not preclude examining boundaries that aren't our own. But the latter is just unsuitable for setting out a theoretical argument on boundaries.

Equipped with these restrictions the number of respective accounts shrinks to a few. The main ideas we get out of this funneling serve as pillars for any relational theory of social boundaries. In short the following points deserve most attention:

- Boundaries are fundamental for social process and antecedent to any social entities and identities. Therefore boundaries must be examined as a subject of its own—any boundaries *of* must be avoided in the beginning (Abbott 1995).
- The relation between networks and boundaries is rather clear: „Networks do not have boundaries.“ (White 1995: 1039) However, pay attention to the following conundrum. Social organization appears in two concurrent modes: blocking and getting action (White 1992). Both rely on networks. But this makes boundaries pervasive and directly linked to networks. What else than networks is blocking action and how should fresh action be possible without activating networks? In this vein ideas about interface as substitute for boundary (White 1981) and the distinction between coupling and decoupling (White 1966, 2008) might become crucial.
- The boundary problem has to be made reflexive within relational analysis (Ronald Breiger in Emirbayer 1997). That is, boundaries of networks must be conceived as networks themselves.
- Boundary change isn't the exception but the rule (cf. Tilly 2004). Temporary boundaries abound.

Taking these claims into account, it shouldn't require too much effort to acknowledge that boundaries are nothing but networks. But the obverse can also be proposed: Any network is a social boundary. I will try to show that this conjecture is warranted against the background of the above list. To this end I am going to introduce a notation that incorporates these ideas (cf. Baecker 1993, 2005; Spencer Brown 1994) and make a formal comparison between network theory and research on organizational boundaries. The result is a fundamental similarity between our knowledge of boundaries and our knowledge about networks.

To be sure, the kind of boundary research I propose here resembles witchcraft. The medieval witch had the competence to sit on the fence and watch both sides, wilderness and civilization, simultaneously (Duerr 1985). Hence she didn't only know what happened on both sides of a boundary, but she furthermore knew how to distinguish and connect them. Actually her very presence brought them forward at all. But her sociologically maybe most intriguing competence was the knowledge of the fence itself on which she could wander around being able to explore it. Our problem is therefore the fence, not its accompanying identities on this or on that side of a boundary. Studies on social boundaries reveal that social „fences“ don't look like lines but more like networks and that they constitute their own topological space (Adams 1980; Aldrich 1971; Barth 1969; Leach 1976; Rumford 2006; Simmel 1908; Tilly 1998, 2005; Turner 1977; Walters 2006; Yan and Louis 1999). Boundaries are a relational phenomenon (Lamont and Molnàr 2002). They are necessary for building relations.

Among other things we now might be able to explain why network researchers always had and still have problems with a conceptualization of boundaries. If it is correct that networks are nothing but boundaries then dwelling in networks looking for boundaries will actually make it difficult to see some. In the end we have to account for the observer. Some see networks, some see boundaries. Consider for example a market interface. The terms of trade define a boundary for firms looking for market entrance. But once you belong to the clique of producers you observe a network of identities, control projects, opportunities, transactions, and risk.

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