

How to Do Qualitative Structural Analysis: The Qualitative Interpretation of Network Maps and Narrative Interviews

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Abstract: To analyze how actors are embedded in social structures, network research is increasingly using qualitative methods, sometimes in combination with standardized approaches. So far, the development of a method for qualitative structural analysis remains a desideratum. Using the example of the analysis of an ego-centric network map and a narrative interview, we conceptualize, explicate and substantiate a qualitative analysis procedure which does justice to the standards of structural analysis as theoretical and methodological stances taken by social network analysis. Based on this example, we design qualitative procedures (sequential analysis, sensitizing concepts, memos) to analyze network maps and narrative data. To do so, we adapt concepts from formal network analysis. Our proposal for this qualitative structural analysis (QSA) is thus a combination of the analytical perspective of structural analysis and analytical standards taken from qualitative social research.

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1. Introduction

One central, basic premise of social network analysis is to see actors' social behavior less through the lens of their personal attributes and instead through their embeddedness in specific relationships or social structures (COLEMAN, 1958). In view of this, social network analysis, with its theoretical and methodological repertoire, aims to analyze social structures, which is why it is also known as "structural analysis" (WELLMAN, 1988). The analysis methods used in social network analysis mainly involve formal, quantitative methods for collecting and analyzing relational data, with visualization in the form of graphs playing a key role (FREEMAN, 2004). Over the last 40 years, especially, various analytical techniques have been developed and become established (for an overview see e.g. HENNIG, BRANDES, PFEFFER & MERGEL, 2012; JANSEN, 2007; SCOTT & CARRINGTON, 2011). [1]

Since the 1990s there has, however, been increasing criticism levied at the basis from which social network analysis starts out, with the analytical approach being accused of "structuralist determinism" (EMIRBAYER & GOODWIN, 1994). This critical stance towards the basic premises of the approach takes into account the fact that social behavior cannot, in fact, only be explained in terms of the relations between actors. Instead, social actors are always simultaneously embedded in both social and cultural structures. (For discussions on the cultural turn of social network research, see e.g. DIAZ-BONE, 2007; FUHSE & MÜTZEL, 2010; PACHUCKI & BREIGER, 2010.) This also allots greater significance to actors' interpretation when it comes to constructing meaning-laden relational structures. [2]

This greater attention paid to actors' cultural embeddedness and their interpretations inevitably leads to greater importance being placed on qualitative network analysis approaches. A first systematization of the German-speaking debate about qualitative network analysis approaches was found in the anthology by HOLLSTEIN & STRAUS (2006). Since its publication, analytical works have followed which have each attempted in their own specific way to put into practice a qualitative network analysis approach (e.g. see CROSSLEY, 2010; GAMPER, SCHÖNHUTH & KRONENWETT, 2012; GLÜCKLER & HAMMER, 2011). [3]

The term "qualitative network analysis" in the German-speaking debate mainly refers to the use and discussion of visualization techniques (i.e. what are known as network maps) in combination with qualitative interviews (also known as "commented network maps"). While the collection of these data, and the visualization techniques, have undergone considerable development and become established (SCHÖNHUTH, GAMPER, KRONENWETT & STARK, 2013), so far social network analysis does not have any established qualitative analysis procedure. Qualitative approaches in the analysis of networks thus currently face the central challenge of finding how they can do justice, or continue to do justice, to the structural approach of network research, but at the same time involve the (meaning-laden) constitution of social structures in their analysis. Thus, the criticism aimed by DIAZ-BONE (2007) at the qualitative network analysis approaches discussed up to that time was that, when analyzing the network maps collected through qualitative means, they ended up using the basis of formal, often quantifying, analysis: the "core activity of structural analysis—that is, the actual analysis of the network structure—[is] still left to standardized procedures and standardized methods" (§36)¹. At the same time, in DIAZ-BONE's further opinion, a frequent issue with qualitative approaches was that they might (or do) summon up a new form of subjectivism, in that the qualitative interpretations place disproportionate emphasis on the actors' ability to shape the network. As DIAZ-BONE pointed out, however, this runs entirely contrarily to the analytical assumptions of social network analysis; qualitative analysis should not simply pass by this perspective, of such central importance to formal analysis, but should instead, he believed, extend it to a qualitative approach. [4]

1 Quotations translated from German texts are ours.

From our point of view, this diagnosis remains valid to this day. For this reason, we would like to use this article to present how we meet this challenge in our empirical work, and how we try to counteract the traps inherent to qualitative social network analysis as described above. On various projects carried out at the University of Hildesheim's Institute of Social Pedagogy and Organization Studies, we developed a procedure which we would like to present here as qualitative structural analysis (QSA). The basic concept of this procedure is to combine the analytical approach of structural analysis with analytical standards from qualitative social research. This article does not claim to present a self-contained procedure; instead it sums up a series of experiences in the practical implementation of qualitative network analysis. The article is thus strongly of a "how-to" nature, with an explanation of the methods and methodologies behind each step. [5]

Below, our first step will be to briefly introduce the basics of structural analysis and clearly present the current challenges of a qualitative approach (Section 2). We will then explain and give reasons for our actions based on an empirical example from an externally funded project. For this purpose, we will start out by very briefly introducing the angle taken by the project and the means by which data was collected (Section 3). Afterwards, we will explicate the procedure we use by means of an example, examining first the analysis of a network map (Section 4) and then the analysis of the corresponding interview (Section 5). In both sections, we will present the process of interpreting based on an example case and lay out condensations of these interpretations, accompanied by a methodological reflection on the procedure. To make the difference between the two perspectives clear, we shall set apart the readings and condensed interpretations of the presented example from the methodological argumentation by putting the former in *cursive* script. Next, in the conclusion, we shall bring together the methodological considerations and present the key elements of QSA (Section 6). Finally, we will reflect on how the approach can be further developed and extended. [6]

2. Qualitative Network Analysis: On the Need for a Methodological Concretion

To identify the challenges faced by qualitative network analysis, let us first show the approach and procedures used by formal network analysis, which has so far mainly been quantitative. As has already been mentioned, at its very heart, social network analysis (SNA) assumes that social relationships, and structures of relationships, affect the social behavior of actors. From this point of view, actions are embedded in social relations (GRANOVETTER, 1985; HOLZER, 2010). The analytical interest of SNA is thus mainly aimed at social structures between actors. [7]

When it comes to the specific approaches to analysis in SNA, an initial distinction can be made between the analysis of whole networks and the analysis of ego-centric networks. The analysis of whole networks is interested in the relationship between a defined set of actors within a system or defined context (e.g. the

network between the children in a class at school). In the case of ego-centric network analysis, the network is analyzed from the point of view of one specific actor, examining all the ties between this *ego* and other actors, as well as all the ties between those other actors (e.g. the network around the child acting as a class representative). HERZ thus also defines ego-centric networks as "the ties between one focal actor (*ego*) and other actors (*alteri*) in his or her direct neighborhood within the network, as well as the ties between those actors (alter-alter ties)" (2012, p.133). [8]

Alongside this differentiation, the concrete methods used in network analysis can be further separated into two distinct approaches. The first draws attention to cohesion (relational analysis) and the second to equivalence (positional analysis, block model analysis) (HENNIG et al., 2012; JANSEN, 2007; WASSERMAN & FAUST, 1999). The analytical approach of cohesion measures the density of relations (i.e. the density of actors' ties) in the network or in regions of the network. Among other things, this allows certain clusters in the network to be identified (e.g. the "girls' cliques" in the class investigated, where girls only have ties to other members of the clique, but not to other children). Meanwhile, equivalence aims to describe structurally equivalent positions in the network. Structurally equivalent positions are said to occur when actors have the same ties without necessarily being in direct contact with one another (WHITE, BOORMAN & BREIGER, 1976). When actors have equivalent positions in the network, the inference can be made that they have similar roles in the network (for example, the class representative and a "popular" pupil might have equivalent positions), allowing certain "types" or "blocks" of actors to be formed, whose relationships with one another can also form part of the analysis. Though positional analysis is particularly popular in the analysis of whole networks, both positional and relational analysis can be used to analyze socio-centric and ego-centric networks. As mentioned earlier, the analytical approaches which have so far become established are mainly quantitative and standardized. [9]

As well as these established methods for analyzing the structure of a network, analytical approaches can frequently also be found in SNA which are derived from specific works on network analysis and have thus made their way into the theoretical and methodological canon. As these cannot be described fully here, some analytical approaches will be picked out at this point which have proven especially useful for the method of qualitative structural analysis. While relational and positional analyses examine the structure of the network as a whole, these are, specifically, analytical approaches which address individual actors or ties. [10]

One distinction frequently found is the dichotomy between strong and weak ties, going back to GRANOVETTER's article "The Strength of Weak Ties" (1973). According to GRANOVETTER, strong ties involve a great deal of time, emotional intensity, a great deal of intimacy and multiplexity, and reciprocity; one example might be friendship ties. Weak ties, meanwhile, involve the absence of these dimensions; one example might be (distant) acquaintances. BURT (1992) extended GRANOVETTER's weak tie approach by adding the concept of "structural holes," shifting the significance of weak embeddedness from the

relational to the structural level. The basis for his approach is that when actors (known as "brokers") manage to bridge "structural holes," this can be of benefit to them. According to this viewpoint, when people are in the position of being the only ones capable of linking several clusters of strong ties, they gain access to resources from the network. BURT (2004) shows, for example, that managers come up with "better" ideas when they are in positions within the network which bridge structural holes. As well as being brokers, actors may also take up positions as isolates, meaning they are only marginally involved in the network, or as gatekeepers, i.e. with an interface function (see TICHY, TUSHMAN & FOMBRUN, 1979). [11]

The basic analytical positions of SNA, outlined here very briefly, show clearly that the structural approach is taking on a dominant role in the methodological distinctions made in network research. The classical approaches, especially, are very much characterized by examining relational structures in their *Sosein* ("being-as-it-is") and thus focusing on "relations as the *result* of communication and action" (HEPP, 2010, p.227), without addressing the contexts in which these relations are generated or have significance. As has already been made clear, this theoretical positioning taken early on is now the subject of considerable criticism. EMIRBAYER and GOODWIN (1994) base their criticism of structural determinism on the fact that it

"neglects altogether the potential causal role of actors' beliefs, values, and normative commitments—or, more generally, of the significance of cultural and political discourses in history. It neglects as well those historical configurations of action that shape and transform pre-given social structures in the first place" (p.1425). [12]

PACHUCKI and BREIGER (2010) also come to the conclusion that the "time is overdue for a conscientious shift beyond cultural explanations for social structure, and structural explanations for cultural outcomes, toward a more integrated vision of social scientific explanation. Social relations are culturally constituted, and shared cultural meanings also shape social structure" (p.219). WHITE (2008), too, sees networks as phenomenological realities which are constructed with meaning. [13]

This discussion on the cultural or constructivist turn in network research is part and parcel of the budding need for less standardized approaches. An initial systematic discussion of qualitative network analysis approaches for the German-speaking debate (HOLLSTEIN & STRAUS, 2006; STRAUS, 2002) was followed by a whole series of empirical works which make different uses of qualitative network analysis approaches, or qualitative or visualizing approaches sometimes combined with standardized, structural approaches (e.g. GAMPER, FENECA & SCHÖNHUTH, 2013; GLÜCKLER & HAMMER, 2011; HERZ & OLIVIER, 2012; HOLLSTEIN, 2010; LESER & VOCK, 2012; STRAUS & HÖFER, 2008; VON DER LIPPE & RÖSLER, 2011). So far, as described above, most qualitative network studies have concentrated on ego-centric networks, and have frequently used what are known as "network maps" combined with qualitative interviews to collect qualitative data. The means of collecting data using these ego-centric

network maps, originating in the "hierarchical mapping technique" (KAHN & ANTONUCCI, 1980), have been extensively documented and discussed (GAMPER et al., 2012; HERZ & GAMPER, 2012; HOLLSTEIN, 2010; HOLLSTEIN & PFEFFER, 2010; OLIVIER, 2013; RYAN, MULHOLLAND & AGOSTON, 2014). It is, however, striking that the discussion on a qualitative means of analyzing social structures—extending beyond ego-centric networks, for example—often comes to a halt at the issue of data collection. In other words, there has so far been no systematic discussion on possible ways to analyze the data collected.² Thus, studies which make use of a qualitative approach to collect social networks still face the challenge of developing a concrete methodological approach for data analysis. In the end, this lack of systematic discussion on methods for analyzing data when carrying out qualitative network analysis means that the criticism levied by DIAZ-BONE (2007) at the qualitative forms of network research remains pertinent. [14]

Based on this desideratum, our research project "RegioTrans—Regionale Vernetzung von Transferträgern [Regional Embeddedness of Career Transition Services]"³ stood alongside other research projects which faced the challenge of developing a qualitative method of analyzing network data. This meant that, from a methodological point of view, our project and this article were confronted with two central questions:

1. How can we analyze and interpret the network maps, gained from qualitative data collection, without applying a quantifying logic, at the same time doing justice to the criteria of a qualitative approach?
2. How can we analyze the qualitative interviews without burying the structural approach (which is central to network research) beneath an overemphasis on ego's subjective constructions? [15]

Below, we report on a methodological procedure which we developed as a result of answering these questions, and which is intended to meet the concerns raised by DIAZ-BONE's criticism. The aim of this procedure, which we will introduce below as "qualitative structural analysis" (QSA), is to apply the structural approach when analyzing qualitatively generated network data, using the standards set in qualitative social research. [16]

3. The Embeddedness of Career Transition Services—The Empirical Field and Our Data Collection Procedure

Before we present QSA in detail based on empirical evidence and conceptual considerations, the project context needs to be introduced in which it was developed. In the project "RegioTrans," we were interested in the network structures of organizations which in Germany are known as *Transferträger* and we translated as career transition services. These career transition services are

2 Exceptions of varying analytical import can, for example, be found in NOACK and SCHMIDT (2013, p.89), who provide notes on how to interpret network images.

3 The project "RegioTrans – Regionale Vernetzung von Transferträgern" was funded by the European Regional Development Fund (ERDF).

helping people to find work during outplacement (job-to-job), e.g. when a company releases staff (BACKES, 2009; PETERS, TRUSCHKAT & HERZ, 2014; TRUSCHKAT, HERZ & PETERS, 2014). [17]

The aim of the project was to analyze the interrelationship between the organizational forms of the career transition services, which are very heterogeneous in this field, and these organizations' network structures, in order to draw conclusions on how they fill the mandate of helping people to find work. For data collection we chose narrative interviews (see ALHEIT, 1994, 2007; SCHÜTZE, 1983) with managers and staff working for career transition services, which were combined with marginally structured network maps. In the interviews we took individual career transition service providers as focal actors, using the network maps to describe and analyze their organizational environment (SCHAUWECKER, 2008). Our interest thus lay in ties between individual services and different regional partners, such as the *Agentur für Arbeit* [employment agency], educational institutions or local companies. In this article, we will use one of these sixteen interviews as an example of our method. To collect the data, we used network maps structured into concentric circles. The network maps were created during the interview with sheets of A3 paper and sticky notes. The maps were structured into four concentric circles. First, the names of people or organizations were written on the sticky notes; these were names mentioned in the narratives as being of importance to a career transition project, described as an example. The actors thus identified were placed on the map as the respondents wished. The only instruction was to put the interviewee's organization in the centre of the map.⁴ [18]

Figure 1 shows an anonymized scan of the network map from an interview with a department managing director and a staff member working at an educational institution providing career transition services. The question generating the narration about the map, or the ties, focused on actors who are or were of importance for a career transition project described as an example.

4 One critical reflection is that collecting ego-centric network data using network maps is not qualitative per se. DIAZ-BONE (2007), for example, criticized the fact that a network map is the visualizing version of a name generator, and should thus be categorized among standardized procedures for formal analysis. This means that standardizations from formal procedures are frequently adopted when generating network maps, without reflection. Further discussion is required on alternative, i.e. more open-ended ways to generate networks in interviews, e.g. without using common forms of network generation and not asking for names (and thus actors) but instead about relations (see also NOACK & SCHMIDT, 2013). Thus, the method needs to be extended from a name generator to a relation generator. Equally, there should be discussion on the status, or the "shape" of the visualization used to collect the data (BAGNOLI, 2009).

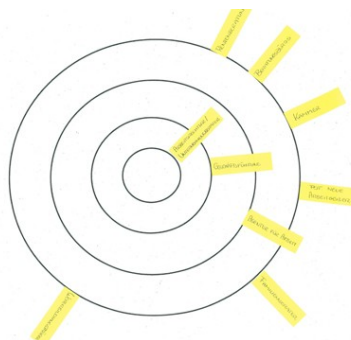


Figure 1: Network map. Please click [here](#) or on the illustration to enlarge. [19]

4. Qualitative Structural Analysis of the Network Map

To interpret the network maps, we have taken our lead from analysis concepts used in formal network analysis (for both ego-centric and socio-centric networks). In the following we distinguish between *structure-focused*, *actor-focused* and *tie-focused* descriptions. This method was developed over several interpretation meetings and various maps created on different research projects; we gradually added further ideas from structural analysis. At this point it should be mentioned that, for the interpretation, we have not altered the original presentation or layout of the network maps, as constructed by the respondents (for more on this, see Section 6). [20]

We categorized *structure-focused* descriptions as those which set out the complexity of the network in a less complex manner. To do so, we adapted analytical approaches which, in formal socio-centric network analysis, come under the concepts of cohesion and equivalence (see Section 2). [21]

The following are questions relating to the cohesion, i.e. the density of the networks:

- Are there regions in the network which have more ties than others?
- Does the network fall into different subcomponents or clusters?
- Are there connections between these clusters?
- Are there structural holes?
- Are there ties between clusters which "work" without the tie to ego?
- How do individual clusters differ with regard to the alters' attributes?
- Where can triads be seen (including those involving ego) which need further observation? [22]

Questions relating to equivalence (think "positional analysis") aim to identify comparable positions in the network ("structurally equivalent" positions) by studying the network pattern. This gave us the following questions for the analysis:

- What actors take up a similar position in the network based on their ties?
- Are there, for example, *alters* with ties both to *ego* and to other (comparable) *alters*? [23]

For these descriptions, observations also have to include the ties between the *alters*. [24]

Actor-focused descriptions focus on analyzing the structural embeddedness of individual actors. In this case a rough distinction must be made between two kinds of procedure. Firstly, there are procedures which, when describing how actors are embedded in their social neighborhood, also consider ties between *alters*. This includes, for example, analyzing the centrality of individual actors, i.e. which actors have a large number of ties to other actors, and which have few or none.⁵ Other questions are:

- Which actors connect to all other actors?
- Which actors connect to other actors who would otherwise be unconnected?
- Which actors connect isolated network segments or bridge so-called "structural holes"? [25]

Secondly, we adapted procedures aimed at the *composition* of the direct neighborhood based on the properties of connections or of *alters*, as an aggregated description:

- What properties are listed for actors in the maps? What attributes come up?
- What actors, with what characteristics, prevail?
- How are the nodes distributed across individual attributes?
- If applicable, what attributes or types of tie predominate in which network segment?⁶ [26]

5 To some extent, these aspects arise from the structure-focused descriptions, which can coincide (relationally) with actor-focused descriptions for ego-centric networks (e.g. in ego-centric networks, density, as a structure-focused description, coincides with actor-focused descriptions for *ego*). However, actor-focused descriptions focus more on the embeddedness of individual actors, and less on the structure of the whole network. For this reason, it can be very productive when describing a map to produce actor-focused descriptions not only for *ego* but (if there is information on *alter-alter* relations from the map or the interview) also for the *alters*. By this means, an *alter* can, for example, be identified as having a broker position.

6 When interpreting network maps which contain *alter-alter* ties, these maps lend themselves to the creation of structure-focused and actor-focused descriptions, both taking into account and ignoring the *ego-alter* relations. *Ego-alter* relations come about in ego-centric networks because of the data collection situation, as *ego* can only name *alters* to which there are relations of the type requested. "Hiding" the *ego-alter* relations can thus reveal aspects (such as structurally important actors or ties, denser subunits within the network, etc.) which are not seen when these relations are taken into account; in other words, structures within the network may be lost, so to speak, in the jungle of *ego-alter* relations.

In addition to this, there are *tie-focused* descriptions arising from the interpretation of individual ties, possibly taking other ties into account.

- What types of tie are listed?
- What ties predominate? Are the ties directed?
- In what direction do the ties go?
- Do individual ties depicted on the map take multiple contents, i.e. is this a multiplex relation?
- Are there ties which stabilize the network, or destabilize it when they are gone (as in a *relational hole*)? [27]

These aspects derived from formal network analysis enabled us to break down the whole map into analysis sequences, which we successively examined in interpretation groups, developing readings in the sense of preliminary interpretational hypotheses (see KELLER & TRUSCHKAT, 2014). We noted these in written memos, also attempting to formulate nuanced propositions about the structure of the network maps, and proposed assumptions for why this structure is as it is, and what kinds of significance this holds for ego. As we cannot present the whole map analysis here, the interpretation below shows main steps and results of a qualitative structural analysis of the network map. [28]

The first interpretation of the map in Figure 1 produced the following descriptions: *The ties identified in the inner circles are ties to an Arbeitsrechtler [labor lawyer], a Geschäftsführung [managing director] and the Agentur für Arbeit [employment agency]. These ties are fewer than those ties to all the nodes further out on the map: to the Rentenberatung [benefits advice office], Beratungsbüro [consultancies], Kammern [chambers of Trade and Crafts], pot. Neue Arbeitgeber [potential employers], Familienberater [family counselors] and Weiterbildungsträger [continuing education provider]. This means that different personal and organizational or institutional actors are named, with the "labor lawyer," also given the attribute "corporate consultant," being stuck the closest to the center of the map. Though the relations between the actors named (alter-alter relations) are not explicitly visualized, the way the actors are laid out in two dimensions on the map suggests how they might be related.⁷ There are thus smaller subclusters, with three actors on one hand (the labor lawyer, managing director and the employment agency) and, on the other hand, the organizations and institutions which are named, on the periphery, at about the same distance from the center of the map. These peripheral alters are of similar significance for ego. If the map is interpreted as a two-dimensional space, the employment agency takes on a function as a kind of hinge between the actors near the center and those outside the final circle. Unlike the organizations and institutions, people are only placed inside the map, i.e. ties to people are accorded greater*

7 If it were assumed that alter-alter relations can only be depicted using a certain visualization technique (e.g. by lines joining them), the visualization techniques used in formal analysis would be adapted (see DIAZ-BONE, 2007) and the qualitative network maps thus heavily pre-adjusted. Instead, the visibility (or invisibility) of *alter-alter* relations in specific visualizations should be used as an analytical impulse which, as the analysis progresses, can for example offer insights into what the *alter-alter* ties mean for ego, or tell us about structural patterns in the field.

*significance. The institutions "outside" the map are not addressed "personally" or in terms of people; instead they are given their institutional designation.*⁸ [29]

We then condensed our descriptions in the form of memos (containing the assumptions and questions below). When exchanging ideas within the research team, we chose the term "qualitative structural descriptions / assumptions" for these descriptions. For further analysis we condensed our assumptions with regard to the following three aspects:

- *A personal actor is closest to the center. In other words, a relation to a person is deemed of particular significance for the career transition project, and corporate actors are named further out. Why are personal relations especially important?*
- *The employment agency has an "ambivalent" position, or intermediate position, between the inner and outer areas. Is this a kind of broker position?*
- *On the network map, a distinction is made between the actors named or placed closer in or further out (center versus periphery). Why do the three in the center make up a tighter-knit cluster than the actors on the outside? Why is there a distinction between two areas?* [30]

These descriptions, assumptions and further questions in the memos formed the basis to deal with the interview data in a manner which combines different methods. As we adopted procedural steps used in qualitative social research, such as the iterative, "sequential" process and creating memos to interpret the maps, our analytical strategy meets basic quality requirements claimed in qualitative research (STEINKE, 2000). The central criterion of intersubjective transparency is guaranteed by deriving a codified procedure from formal network analysis, interpreting the data in groups and recording the analysis results in memos. Furthermore, on a methodical level, we created a narrative relate (reproduction) of the map by transferring it to text form in the memos. In doing so, we were implementing an analytical translation which moved away from any quantifying logic and allowed the structural analysis from the map to be combined with the interpretations from the interview within a qualitative approach. [31]

5. Qualitative Structural Analysis of the Interview

One point which must be noted regarding the interpretation of the interviews is that these data have a different structural manner. While the network map is a kind of two-dimensional snapshot, the narrative interview stands out for its procedural character. Thus, the generation of an ad-hoc *Stegreiferzählung* [narration] (SCHÜTZE, 1984) is specifically aimed at a narrative recap, ideally allowing the narrator to sink so deeply in the memories that homologies develop between the *Erlebnisgestalt* [gestalt of experience] and the *Erzählgestalt* [gestalt of narration] (ROSENTHAL, 1995). What makes this interview form special is the

8 Also of interest is the observation that, in contrast with other maps, none of the *alters* were placed within the first circle. In the interview analysis (combined with the maps) this also revealed a different definition of organizational "inner" and "outer" areas among the actors questioned.

fact that the "data from our empirical analysis [...] are subjective constructions, 'inside perspectives' which break the conditions of 'objectivity' in various ways" (DAUSIEN, 1996, p.105). As narrative interviews are an established method of generating data in qualitative social research, this means that, in contrast to the qualitative analysis of network maps, we can draw upon established methodological standards in our analysis; standards which are suited to the particular procedural nature of the data and to reconstructing those inside perspectives, as well as the "objective" external aspects which they reveal. [32]

Specifically, we prepared the content of the interviews for our analysis by first creating protocols following the sequential structure of the interview. These were used on the one hand to break down the interview as a whole, and on the other to organize it according to a formal logic. This reveals "discrete narrative segments" (SCHÜTZE, 1984, p.89) in the interviews which on one hand are based on the formal narrative presentation of a beginning, a middle and an end, and on the other hand offer indications of contoured experiences. [33]

Breaking the interview down in the protocol has two key benefits for subsequent analysis. Firstly, it allows certain sequences in the interview to be selected for detailed analysis examining criteria specific to that interview, for example choosing especially high-density, problematic or repeated contoured experiences. In this way the procedure ensures that the focus is on the interviewee's inside perspective. Secondly, this procedure allows sequences to be picked out as appropriate after the network map has been analyzed. [34]

The analysis of the network map thus sensitizes for certain topics, relations and constellations in the interviews, allowing theoretical sampling of the sequences (for theoretical sampling see also GLASER, 1992; STRAUSS & CORBIN, 1990; TRUSCHKAT, KAISER-BELZ & VOLKMANN, 2011). To analyze the interviews further, we used procedures from grounded theory methodology. The first phase, open coding, involved breaking down the data to produce a large number of "codes" (see GLASER 1978; STRAUSS & CORBIN, 1990). "Open coding connotes just that—data are open to multiple simultaneous readings/codes" (CLARKE, 2005, p.7f.). To do this, we use the principle of sequential analysis, which is well established in qualitative social research, i.e. analyzing a narrative segment step by step:

"Strict sequential analyses soon lead to the collapse of all the preconceptions, judgments, opinions and views which we generally accepted or apply in our case. In other words, sequential analysis is specifically not designed to fit in neatly with a phenomenon; sequential analysis is only a process to destroy all our social prejudices, even if that is not always achieved. Once this point of view has been destroyed using sequential analysis, the researcher uses abductive reasoning to put forward statements about the area under investigation" (REICHERTZ, 2000, §45). [35]

In a similar way to when analyzing the network maps, we documented the developed readings during the sessions of interpretation, using audio recordings and written notes, and condensed them in further analysis. After interpreting a

sequence, we then took down a brief summary in spoken and/or written memos. This process corresponds to axial coding, in that it involves creating empirical relations between the condensed readings developed during open coding (see STRAUSS & CORBIN, 1990; TRUSCHKAT, 2013). Finally, these memos on the individual sequences can be further condensed during selective coding into category-based or case-based grounded theory (see GLASER, 1992; TRUSCHKAT et al., 2011). [36]

As already suggested, a methodological procedure of this type ensures that the data format of the interview fits the analysis methods, by aiming to analyze the "inside perspectives" and the "external aspects" they reveal. However, for the interview analysis to fit in with the network approach, the analysis must in fact be aimed at those external aspects and their subjective fracturing, which, from the point of view of network theory, act as a structure. To achieve this focus in the analysis while at the same time doing justice to the special nature of the data format, we used the structural approach of SNA in the analysis, as a sensitizing concept. Thus, while the findings from the analysis of the network map helped to sample when selecting the sequences, the theoretical insights of SNA guides the attention during the analysis. STRAUSS and CORBIN (1990, p.42) sum up the role of theoretical sensitivity in the analytical process as follows:

"Theoretical sensitivity refers to the attribute of having insight, the ability to give meaning to data, the capacity to understand, and capability to separate the pertinent from that which isn't. All this is done in conceptual rather than concrete terms. It is theoretical sensitivity that allows one to develop a theory that is grounded, conceptually dense, and well integrated [...]." [37]

The challenge when analyzing the narrative interviews is thus generally that of adopting an analytical approach inspired by structural analysis, with a conceptual rather than a predefined character, making it clear that this approach must always be updated empirically and with the interviewee's "inside perspective." [38]

The following example from practice shows how this can be done: we have picked out an interview sequence sampled using the follow-up questions developed in the analysis of the network map. In the example, we concentrate on the initial condensation of readings (see above). This was: *A personal actor is closest to the center. In other words, a relation to a person is deemed of particular significance for the career transition project, and corporate actors are named further out. Why are personal relations especially important?* [39]

The sequence below is thus a section of the interview in which the interviewee (career transition services 1, CTS1) was asked to name all the actors involved in a previous career transition project, and she reports on one central actor. Below, readings are developed for this sequence as an example:

CTS1: then let's take our current project

I1: [yes]

CTS1: what we have is very exciting you see we came across an (.) labor lawyer (1)

I2: [I'll just write labor lawyer]

CTS1: exactly and he's also a corporate consultant (1) and he came to us and said he had a case and he had to uh he had several companies and he had to close down one company (...) so I'll start putting it in order like this and say that for me he was like if I'm here [points at inner circle on map] he was the most important contact to get into this project.⁹ [40]

Here, the interviewee describes how contact was made for a current career transition project being carried out by her company. This happened when a labor lawyer approached the company where we held interviews as he needed to close down a company, which the interviewee saw as "very exciting." This excitement came from the direction in which contact was made: while career transition services generally approach companies who might potentially want or have to reduce their staff, in this case the query came from outside, with the service being arranged via the corporate consultant. Furthermore, it emerges from the descriptions that there was already a project ("to get into this project") and that they now wanted to get a foothold in it. This means that the idea of cutting staff numbers via a career transition company was not developed or offered by the services, but had already been formulated, and the only question was which actors were to take part in the project. [41]

When the interviewee says, "so I'll start putting it in order like this and say that for me he was like if I'm here he was the most important contact to get into this project" then it becomes clear that the actor declared the most important is the one who gets the company onto the project. One point worth underlining is that this is an actor who the interviewee personally considers ("for me") to be the most important. This person, the "labor lawyer" is significant precisely because the relationship to this person helps them get an assignment. In other words, this shows that priority is given to relations which positively affect the assignment. In putting the actors in order, the interviewee is defining the individual actors as gatekeepers or as brokers whose consent opens up the path to the next actor, bringing the interviewee closer to the aim of being given the assignment. [42]

As the description goes on, the relation to the labor lawyer is qualified further—and presented in a different way. The interviewee starts calling him the "most important contact," i.e. she again underlines the significance of this actor, while also making it clear that the direction of the dialogue has reversed: among other things, she addresses him in order to gain access to the project. While the labor lawyer approached the career transition services from outside (directed tie from

9 The transcription notes follow the basic transcription level used in the GAT transcription system (see SELTING et al., 1998): "[]" mean overlaps and simultaneous speech, "(.)" is a micro pause of up to 0.2 seconds duration, "(-)" is a pause of approximately 0.2 to 0.5 seconds duration "(1) or (2)" resembles pause of one second duration, "(...)" stands for omissions in the transcript and "=" means fast, direct connection of new spoken segments (latching). The names of actors mentioned have been anonymized. Translation of the interviews into English is ours.

the labor lawyer to the company being interviewed), over time the direction of the tie changes, as the interviewee now addresses the labor lawyer. [43]

She then outlines how they go on to gain access to the career transition project:

"... then what happens is that you introduce yourself to the company and then things went through the management though the company was=is so small that there wasn't even a works council that happens sometimes yes he was then=exactly if we stay on that topic uh he was actually just as important because if he says no then it's goodbye to me if he says but I don't like that mrs. harms the deal hinges on personal liking (...) but he's a bit further away because this one here opened up the map [points at "labor lawyer"] so if I just do this [fiddles with the sticky notes] (4) we can do it like that this is our career transition services [points at the center of the map] so then I'll stick that there (-) he's the one that got me onto the assignment and I have to (...) present myself there he has to get a good impression of me." [44]

In this passage Mrs. Harms as we called her names the tasks she and her company face next to be awarded the assignment, at the same time introducing another actor: the managing director of the company cutting its staff. She explains, "then what happens is that you introduce yourself to the company and then things went through the management." As she describes the tasks allotted to her (introducing herself, presenting herself) she describes in more detail how they gained access to the company cutting its staff and the relation to that company, or rather to the managing director: "he [is] actually just as important," she emphasizes, as without his consent she will not get the assignment ("if he says no then it's goodbye to me"). Both the managing director and the labor lawyer are of roughly equal "importance" for the interviewee, and this clearly reveals how the interviewee, or her company, depends on the two actors. In that regard, in this passage the interviewee outlines a triad consisting of her career transition service (ego), the labor lawyer and the managing director. The labor lawyer is linked to the management of the company cutting its staff, and to ego. From this position he can initiate contact between the career transition service (ego) and a potential client (the management). This means that the labor lawyer is being introduced here as the tertius iungens (OBSTFELD, 2005, p.102), i.e. as a third party bringing together other actors. In the lead-up to being awarded the assignment, ego depends on both actors. It is only when the labor lawyer who is in contact with the managing director approaches ego and says "he had a case" that ego can act and make a presentation to the management. As "the deal hinges on personal liking," whether or not the service provider attracts liking (and the assignment), both—liking and the assignment—depend on the relationship between the labor lawyer and the company (management). [45]

Starting out from these readings, we condensed our analysis as follows: The analysis of the network map and the sequence of the interview can be used to show that the actors' central arrangement is related to their importance in awarding the assignment.¹⁰ The ties are triadic in nature, with ego depending on

¹⁰ One point which we do not examine in detail in this article is that of questions which arise through a more combinative approach (network maps and interview), as this can only be shown

the constellation of the alters. Within this triad, one actor takes on a function as a broker. As the analysis clearly reveals, this has to be a personal actor as the procurement market, and thus the relationship between ego, the labor lawyer and the management, is structured such that it hinges on personal liking. Analysis of the procedural data from the interview also reveals the dynamics of the development of ties. It becomes clear that though the personal actor initially acts as a tertius iungens, approaching ego and making contact with the management, he later becomes one of ego's contacts himself. Thus, while ego is initially fully dependent on this actor, subsequently ego can actively approach the actor. The tie thus changes from a unidirectional to a symmetrical tie. [46]

As the example clearly shows, transferring the structural approach to the interviews, conveyed as a sensitizing concept, can on the one hand take into account the interviewees' insider perspective and on the other hand analytically reveal how much ego is influenced by relations, or influences them. [47]

6. Prospects for Qualitative Structural Analysis

Using the analysis example, we were able to show how we can carry out the transfer of standards of structural analysis integrated in a qualitative analysis process. This qualitative structural analysis (QSA) allows qualitatively generated network maps and interview data to be analyzed not by means of quantification but according to qualitative standards, and at the same time following the structural approach: QSA is a way of qualitative analysis which puts a structural approach into practice for interviews and network maps. [48]

QSA offers a methodological backing for the qualitative analysis of the network maps by applying sequential analysis to the analysis of network data thanks to structure-focused, actor-focused and tie-focused questions. It also sensitizes research for dyadic or supradyadic elements in interviews, by transferring a structural approach to analyzing interview material. [49]

With this approach of developing structure-focused questions for both types of data (network maps and interviews) using sequential analysis, QSA goes beyond being a "mere" combination of different analysis methods and instead integrates

to a limited extent in the example selected. Thus, as the analysis went on, we discovered that some subsets of results in the memos can overlap and complement one another from network maps to interviews, sometimes allowing different conclusions or being contradictory. The starting point for divergent statements from the data of network maps and interviews is that the two data formats can enter the analysis on an equal basis. Thus, the interviews do not serve to produce the "real" network map, and this, in turn, is not "just" to be understood as a narration generator suitable for generating the "real" database, i.e. the interview. For example, during the analysis it is only through the interview that we gain information about the tie direction or the significance of the industrial lawyer in gaining access to the assignment (see above). Similarly, it is only through the network map that we discover more about the peripheral actors, or generally about a center/periphery relationship between *alters*. Even as the interview goes on, we do not find out much about the peripheral ties, especially, as the individual actors are only introduced quickly, one after the other, during the interview, without further qualifying the relations. Here, it is thus only by examining the map that we see that these peripheral ties to organizational actors are of little significance. Altogether, divergent statements, especially, offer a chance to gain an awareness of the "blind spot" in the methodological procedure generated from the data in question.

the structural approach within a qualitative approach. This methodological integration thus provides a tool which uses sequential analysis to capture and theoretically condense interpretations by means of coding and memos. [50]

Schematically, the concept of QSA can be laid out as follows:

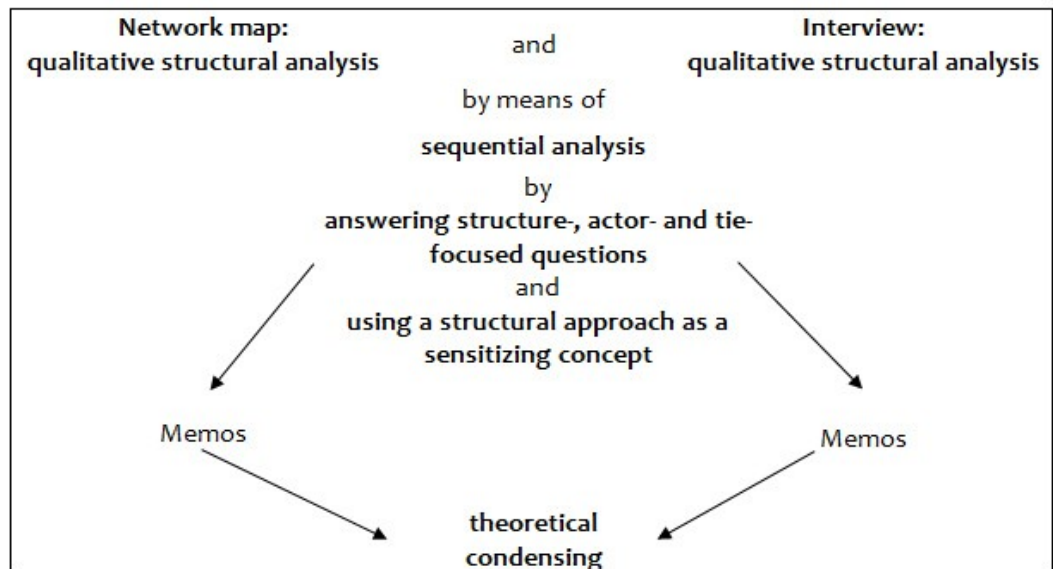


Figure 2: Qualitative structural analysis [51]

In our article we focused on the interpretation of ego-centric network maps and narrative interviews, and proposed a strategy for analyzing network maps and interviews by qualitative means, inspired by concepts from formal network analysis and meeting qualitative standards. However, the considerations presented here cannot, and should not, be understood as definitive; instead, they should lead to other important points of discussion regarding the development of qualitative network analysis, taking the form of QSA. Finally, let us name some desiderata:

- Order of steps: what comes when? Until now, we started out by subjecting the information from the network maps to qualitative structural analysis, only later combining the conclusions recorded in memos with interpretations from the narrative data. This procedure of selecting data can also be explained by means of the theoretical considerations of the research project presented here. However, other procedures are also imaginable which involve shifting between interpreting the maps and the interview in a different order. This leads to the question of whether varying the order of the analytical steps could have any major effect on the analytical results.
- Research question vs. research approach: another issue closely linked to the previous point is the question of the significance of the structural approach in relation to the guiding research questions. What is the relationship between the sensitizing concepts derived from SNA and a research question which is open in the sense of a qualitative, reconstructive analysis? And what about

research questions—as we saw in our example—which may extend beyond research questions explicitly focused in network analysis.

- Theoretical condensing: while, in this how-to report, we have examined one case, i.e. one map and one interview, the question which arises next is that of how further theoretical condensing can be carried out, following the qualitative paradigm. This condensing may on the one hand be from individual cases to types (see KELLE & KLUGE, 1999), by understanding the combination of the network map and the interview as data from one case, and placing it in relation to other cases. On the other hand, condensing into categories is also imaginable, with focus on their empirical relations, which do not necessarily have to follow case logic. This would place the network maps and the interviews in a different relationship to one another, no longer being related to one another on a case-to-case basis. A further distinction needs to be made between what pros and cons arise from each approach, and what effects this has on analytical results.
- Structural approach: in the presentation of QSA set out here, we have initially reserved the term "structure" for SNA. However, this view overlooks the fact that the key theoretical elements of an interpretative paradigm do in fact also involve the term "structure," on one hand extending beyond a focus on ties between actors, and on the other hand with a strong impetus from social constructivism. The term "structure" as used in the interpretative paradigm thus always includes that actors are involved in and refer to structure. On a methodological level the idea is thus to reflect in detail on the terms of structure taken as a basis.
- Ego-centric and whole networks: in the discussion, qualitative or mixed methods of social network analysis are frequently equated with ego-centric network maps combined with interviews. Our article may also increase that impression, as we have developed and presented the methodology of QSA based on the example of an ego-centric network map combined with parts from a narrative interview. However, it should be emphasized that even "whole network" analyses can (at least in combination) contain qualitative elements (e.g. see CROSSLEY, 2010; HEIDLER, 2011; HEIDLER, GAMPER, HERZ & EßER, 2014; SCHIFFER & HAUCK, 2010; UZZI, 1996) and that open-ended approaches are not limited to ego-centric networks or network maps. Future research may show whether QSA can also be used for whole networks and, if so, how.
- Qualitative data variety: just as qualitative network analysis methods are not restricted to ego-centric network maps, qualitative data (e.g. on networks) cannot, or do not have to be, gathered using only interviews. Thus, future works should, for example, determine how QSA can be employed, e.g. based on observational or documentary data.
- Digitization: another issue left unresolved, as we see it, is how computer programs can be used in the qualitative analysis of network data. For example, we digitally visualized and anonymized the maps for the purposes of documentation and, in part, to present the results, using the [Vennmaker](#) program (not illustrated here). While carrying out the interpretation and

answering the structure-, tie- and actor-focused questions using the "original" maps, as described above, we noticed that the digitally produced map provides an image which sometimes involves changes in the database. For example, another career transition service's map was later digitalized for documentation purposes. It was then no longer possible to tell whether sticky notes were stuck on top of one another, and it was not possible to digitize marginal notes made during the data collection process, such as small handwritten notes on or at the edge of the map. Future works may also show how digitizing network images could be integrated into qualitative analyses and seen as a step in "fracturing" the actors' constructions. [52]

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