4.6 Triangulation in Qualitative Research

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In social research the term 'triangulation' is used to refer to the observation of the research issue from (at least) two different points.

This is most often realized by means of applying different methodological approaches. As a strategy for the validation (see 4.7) of the procedures and results of empirical social research triangulation has been given special attention, particularly in the more recent publications on qualitative methods (cf. Marotzki 1995a; Schründer-Lenzen 1997). Triangulation is currently also being used in the debate about the relationship between qualitative and quantitative research (Jick 1983; see 4.5). In this chapter, however, we are primarily concerned with triangulation within qualitative research, which has been the subject of serious discussion in recent literature (e.g. Flick 1998c; Seale 1999a,b; Steinke 1999).

1 TRIANGULATION AS A VALIDATION STRATEGY

The idea of triangulation was imported from land surveying into the methodological literature of the social sciences – admittedly in a rather metaphorical sense. Blaikie (1991) explains, for example, that its original use in the social sciences has little in common with the way it is used in surveying. The debate about non-reactive measurement procedures (Webb et al. 1966) and the 'multi-trait multi-method matrix' approach of Campbell and Fiske (1959) constitute the starting point for the general methodological discussion of the concept. Greater attention within qualitative research has been given – even in the present day – to the suggestions of Denzin (1978), who initially understood triangulation as a validation strategy and distinguished the following four different forms.

- *Triangulation of data* combines data drawn from different sources and at different times, in different places or from different people.
- *Investigator triangulation* is characterized by the use of different observers or interviewers, to balance out the subjective influences of individuals.
- *Triangulation of theories* means 'approaching data with multiple perspectives and hypotheses in mind ... . Various theoretical points of view could be placed side by side to assess their utility and power' (Denzin 1978: 297).
- Denzin's central concept is *methodological triangulation* 'within-method' (for example, the use of different subscales within a questionnaire) and 'between-method'.

The goal of this last strategy is described by Denzin as follows: 'To summarize, methodological triangulation involves a complex process of playing each method off against the other so as to maximize the validity of field efforts' (1978: 304).

2 CRITICISMS OF TRIANGULATION

In a number of contexts there have been critical discussions of triangulation as a strategy for validation in the sense which we have outlined: too little attention is paid to the fact that every different method constitutes the issue it seeks to investigate in a specific way (e.g. Bloor 1997: 39). If this aspect is neglected, triangulation is faced with the accusation of 'extreme eclecticism' (Fielding and Fielding 1986: 33). Silvermann (1985: 21) feels that 'This casts great doubt on the argument that multiple research methods should be employed in a variety of settings in order to gain a "total" picture of some phenomenon ... . Putting the picture together is more problematic than such proponents of triangulation would imply. What goes on in one setting is not a simple corrective to what happens elsewhere – each must be understood in its own terms.' Fielding and Fielding (1986: 33) sum up their criticism of Denzin's ideas in the following terms: 'We should combine theories and methods carefully and purposefully with the intention of adding breadth or depth to our analysis but not for the purpose of pursuing "objective" truth.' Blaikie (1991) complains that the combination of different methods pays too little attention to the respective theoretical backgrounds of the individual methods.

In his more recent work (e.g. Denzin 1989c: 246; Denzin and Lincoln 1994a: 5), Denzin has taken up these criticisms and now understands triangulation as strategy leading to a deeper understanding of the issue under investigation, and thereby as a step on the road to greater knowledge, and less towards validity and objectivity of interpretation. Triangulation is now seen less as a validation strategy within qualitative research and more as a strategy for justifying and underpinning knowledge by gaining additional knowledge (Denzin and Lincoln 1994a: 5; cf. Flick 1992a,b).

3 FORMS OF APPLICATION

The four forms of triangulation suggested by Denzin may be used – even bearing in mind the criticisms we have listed – as starting points for the realization of this strategy.

Triangulation of data

In addition to verbal data – interviews (see 5.2) and group discussions (see 5.4) – visual data are currently receiving considerable attention in qualitative research. Apart from the emphasis on (not only participant) observation (see 5.5), video-recordings and photos (Becker 1986a; see 5.6) are being used with increasing frequency, and also the analysis of cinema films (Denzin 1989c; see 5.7). As a result of this, new perspectives in the triangulation of data are emerging: apart from their use in interviews (cf. Flick 2002, chs 8–9; Fuhs 1997), visual data may be triangulated with verbal data as an independent source of information (Harper, in 5.6, gives an example of the linking of photos and interviews). Completely new types of data, such as electronic data (see 5.8), are opening up further possibilities of triangulation with traditional types of data.

Investigator triangulation

Current implementations may be found in the proposals that interpretations of collected data should only be carried out in groups, so as to expand, correct or check the subjective views of interpreters. In the context of objective hermeneutics (Oevermann et al. 1979; see 5.16), this has long been required. Different ideas about research workshops (either in the sense of Strauss 1987 or as they are used in biographical research and objective hermeneutics, see 6.2) are also indebted to this idea.

Within-method triangulation

This principle may be clarified using the example of episodic interviews (Flick 1996, 2000b): there some research issue (for example, technical change in everyday life) is explored by means of invitations to narrate, focusing on experiences in concrete situations. These are combined with questions that focus more on definitions and

general answers. In this, questions are asked, for example, about the concept of a computer, which the interview partner has developed over a long period of time ('What do you associate today with the term "computer"? What types of equipment does it include?'). Before this the interview partner is asked to talk about the situation in which he or she was confronted with a computer for the first time ('Could you describe for me the situation in which you first got an idea of what a computer is?' or 'Under what circumstances did you first come into contact with a computer? Could you tell me about that situation?') or situations in which the computer has a special influence today in everyday life. In this way, an attempt is made in such an interview systematically to unite the methodological approaches of the semi-structured interview and the narrative, using their respective strengths. On the one hand, this is intended to open up complementary perspectives on the research issue through the interviewees' mode of experience: as for the particular process-perspective that becomes clear in (situational) narratives ('When I first encountered a computer ... '), the abstract description of a state ('a computer for me is ... ') works in a complementary way. On the other hand, it is intended to clarify the different facets of the subjective approach to the research issue. For example, a female French information technologist, at an abstract level of more general concepts, regularly talked of the gender-specific obstacles that generally make it more difficult for women to handle computers or technology. In the particular situations that she recounted, on the other hand, what became clear was a consistent success story of overcoming difficult equipment and situations (cf. Flick 1996).

Between-method triangulation

Its is the combination of different methods, however, that is most strongly associated with the keyword triangulation, and in this different emphases are given: on the one hand this refers to the linking of qualitative and quantitative methods (cf. Engler 1997; Flick 2002, ch. 21; see 4.5) in different research designs. On the other hand, Marotzki (1995b) proposes the combination of reactive procedures (for example, narrative interviews, see 5.2, 5.11), in which the investigators are part of the research situation, and non-reactive procedures (analysis of available materials such as documents, photos, diaries and the like, see 5.15), that is to say, data that were not set up for the investigation. In this process, the boundaries of both methodological approaches are transcended. Moreover the triangulation of different approaches makes it possible to capture different aspects of the research issue – such as concrete examples of professional activity and knowledge of one's own modes of action and routines.

In a study of trust in counselling relationships (Flick 1989), subjective theories of consultants about confidence were collected in semi-standardized interviews and triangulated with conversation analyses of consultation talks which the interviewees had had with their clients in their everyday professional life. While the first approach shed light on more general experiences and ideas on the part of the consultants about preconditions and essential prerequisites for the creation of confidence, the second approach made it possible to show how these ideas could successfully be translated into concrete action, or how and why this failed to happen.

Methodological triangulation is of particular current interest in ethnography. In Lüders's opinion (1995: 321), 'ethnography is turning into a research strategy which embraces every conceivable and ethically tenable option for collecting data'. Here the methodological approaches necessary to realize such options are triangulated with each other, even when the term is not always mentioned explicitly. The end-result is less a reciprocal validation of the discoveries made using the individual methods but an extension of the possibilities of discovery about the aspect of life under investigation. Since different methods, such as observation or interviewing, tend to be combined in a rather *ad hoc* way in a situation of extended participation (see 5.5), it is also possible to speak of *implicit* triangulation in ethnography (Flick 1998c).

Explicit triangulation occurs when ethnographic methods of extended participation and field observation are deliberately combined with the use of (career-biographical or episodic) interviews with individual actors at individually agreed times. For example, in an ongoing project (cf. Gebauer and Flick 1998), regular ethnographic observations in fields where such new sports as inline-skating are practised are being triangulated with episodic interviews conducted separately with individual athletes. The first approach makes it possible to analyse the modes of action and communication, whilst the second clarifies the meaning of the sport and the 'scene' for the participants.

If the concept of triangulation is taken seriously, it is characteristic of all of these variants that they see the procedures they combine as being of equal value and that they do not begin by regarding one procedure as central and the others as preliminary or illustrative.

Triangulation of theories

In combining different methods it must be borne in mind that each of them was developed against a different theoretical background. In concrete situations of triangulation the partially incompatible epistemological assumptions about the research issue, or about (qualitative) research in these different theoretical backgrounds, are carried over by the methods.

This problem may be clarified with reference to one of the examples mentioned above. The reconstruction of subjective theories proceeds from an explicitly subject-oriented understanding of knowledge and action (summed up by the keyword of the reflexive subject, Groeben 1990). Conversation analysis, on the other hand, rests on a more situation-oriented view of action (summed up by the keyword of the conversational machine) that largely dictates to the individual participant how he or she can or should react to particular utterances of their interlocutor (see 5.17). This becomes a problem if such differences are not taken into account in the way the research issue is understood. As a solution, a number of alternatives have been discussed: Blaikie (1991: 129), for instance, suggests only combining methods within a single research approach, and points to the example of Cicourel (1975) who combined different methods with one another ('indefinite triangulation') within an ethnomethodological approach. As an alternative to this, Fielding and Fielding (1986) require that these theoretical perspectives be included in the analysis of the data obtained, of the convergence and divergences which the methods produce. Finally, Denzin (1989c) feels it is important to look at data from different theoretical angles, in order to uncover new facets of the theories in the data.

4 SYSTEMATIC TRIANGULATION OF PERSPECTIVES

The proposal of 'systematic triangulation of perspectives' (Flick 1992a,b) leads in a similar direction. Here different research perspectives within qualitative research are combined with one another in a targeted way, to complement their strong points and to illustrate their respective limitations. This approach can be related to the four types of application discussed above, but will be outlined here as an example of the interrelating of different methods, using the example already cited where consultants' subjective theories of trust in relation to clients are reconstructed with interviews and communicative validation (using the ideas of Scheele and Groeben 1988 and Kvale 1995a; see 4.7), and triangulated with conversation analyses and counselling conversations. Here a number of different research perspectives are applied: the first approach focuses on subjective views (of the consultant), whereas the second approach targets descriptions of everyday routines.

In this way it was possible to realize two of the research perspectives of qualitative research that were distinguished by Lüders and Reichertz (1986). Using a different set of terminology (Bergmann 1985), in the first approach a reconstructive procedure is applied and, in the second approach, combined with an interpretative procedure (for examples see Flick 1992b). This approach explicitly combines triangulation of methods and data with a triangulation of theoretical perspectives.

5 PRACTICAL PROBLEMS OF TRIANGULATION

Case triangulation

The most consistent variant is to apply the triangulated methods to the same cases: counseling conversations by the consultants who are being interviewed are collected and analysed, and the persons being observed in a particular field are (all) interviewed. This procedure makes possible a case-related analysis of both types of data and also makes it possible to compare and interrelate, in the context of a single-case, the different perspectives opened up by the methodological approaches. In addition, these

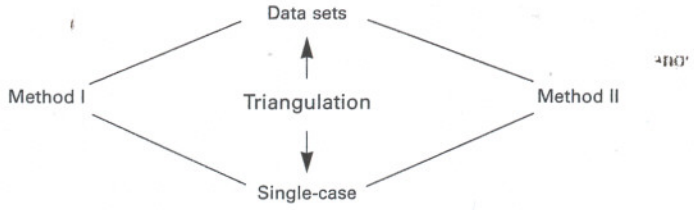

Figure 4.6.1 Starting points for triangulation of methods

comparisons and interrelationships can also be undertaken at a higher level: systems that emerge from a comparison of one type of data (for example, sequential patterns in counselling conversations) can be set against patterns from the comparison of other types of data (emphases and blind spots that may be determined in respect of all subjective theories or specifically for particular professional groups). Sampling decisions (see **4.4**) are only taken once, because the same selection of cases is used for both types of data.

The disadvantages are, first, that the load for an individual participant in an investigation is often unreasonably large: to be ready for an interview and in addition to provide a counselling conversation is, if measured against the normal requirement of taking part in a study, a comparatively heavy burden. Secondly, the danger of dropout rises markedly. Everyone who refuses to provide either an interview or a counselling conversation is 'lost' to the entire investigation that seeks to triangulate on the basis of the particular case.

Triangulation of data sets

Finally, in observations on open spaces (such as sport 'scenes') there is a problem that so many people have to be observed that not all of them can be interviewed. For that reason, case triangulation is not possible, and so it should be implemented at the level of data sets.

The individual methods are initially applied independently of each other, which produces a set of observations and a series of interviews. Both are analysed to assess what they have in common and where they differ. Triangulation then relates in practical terms to the results of both analyses and puts them in relation to each other. As a practical problem the question arises here of how comparability of the samples, where the different methods have been applied, can be guaranteed. In addition it must be clarified whether the different methods can be applied at the same time or whether, because of project planning and resources, the empirical steps have to be conducted sequentially – first the observational data are collected and analysed and then the interviews are conducted and analysed. In this case possible influences of the different times on content should not be forgotten.

6 PERSPECTIVES: TRIANGULATION BETWEEN CONVERGENCE AND DIVERGENCE

The aim of the triangulation of different approaches and perspectives at both levels (cf. Figure 4.6.1) should be less a matter of obtaining convergence in the sense of confirmation of what has already been discovered. The triangulation of methods and perspectives is particularly useful for theory-development, when it can elucidate *divergent perspectives*, when – to take up the above example again – the action of the consultant is different from what his or her subjective theory about confidence would lead us to expect.

Then we have a new perspective that requires theoretical explanations. From this kind of understanding of triangulation we may make connections to the idea of 'theoretical sampling' and the theoretical saturation of Glaser and Strauss (1967). In accordance with this, Glaser and Strauss (1967: 68) maintain that 'a theory generated from just one kind of data never fits, or works as well, as a theory generated from diverse slices of data on the same category'. In the process of theoretical sampling (see **4.4**), further methods are also consistently used if the level of knowledge can thereby be increased. If the inclusion of new data no longer delivers new knowledge then theoretical saturation has been reached. Where the use of further methods can 'only' confirm knowledge that we already have, in the sense of validating it, then triangulation comes up against the border of theoretical saturation. Accordingly, triangulation should be understood as a means of extending our knowledge of the research issue.

We therefore have *three modes of application for triangulation*: as a validation strategy, as an approach to the generalization of discoveries, and as a route to additional knowledge.

FURTHER READING

Denzin, N. K. (1978) *The Research Act*, 2nd edn. Chicago: Aldine. (3rd edn. Englewood Cliffs, NJ: Prentice Hall, 1989.)

Flick, U. (1992) 'Triangulation Revisited – Strategy of or Alternative to Validation of Qualitative Data', *Journal for the Theory of Social Behavior*, 22: 175–197.

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