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Triangulation. Triangulation refers to the use of more than one approach to the investigation of a research question in order to enhance confidence in the ensuing findings. Since much social research is founded on the use of a single research method and as such may suffer from limitations associated with that method or from the specific application of it, triangulation offers the prospect of enhanced confidence. Triangulation is one of the several rationales for MULTIMETHOD RESEARCH. The term derives from surveying, where it refers to the use of a series of triangles to map out an area.

TRIANGULATION AND MEASUREMENT

The idea of triangulation is very much associated with measurement practices in social and behavioral research. An early reference to triangulation was in relation to the idea of UNOBTRUSIVE METHOD proposed by Webb et al. (1966), who suggested, “Once a proposition has been confirmed by two or more independent measurement processes, the uncertainty of its interpretation is greatly reduced. The most persuasive evidence comes through a triangulation of measurement processes” (p. 3). Thus, if we devise a new survey-based measure of a concept like emotional labor, our confidence in that measure will be greater if we can confirm the distribution and

correlates of emotional labor through the use of another method, such as structured observation. Of course, the prospect is raised that the two sets of findings may be inconsistent, but as Webb et al. observed, such an occurrence underlines the problem of relying on just one measure or method. Equally, the failure for two sets of results to converge may prompt new lines of inquiry relating to either the methods concerned or the substantive area involved. A related point is that even though a triangulation exercise may yield convergent findings, we should be wary of concluding that this means that the findings are unquestionable. It may be that both sets of data are flawed.

TYPES OF TRIANGULATION

Denzin (1970) extended the idea of triangulation beyond its conventional association with research methods and designs. He distinguished four forms of triangulation:

1. *Data triangulation*, which entails gathering data through several sampling strategies, so that slices of data at different times and social situations, as well as on a variety of people, are gathered.
2. *Investigator triangulation*, which refers to the use of more than one researcher in the field to gather and interpret data.
3. *Theoretical triangulation*, which refers to the use of more than one theoretical position in interpreting data.
4. *Methodological triangulation*, which refers to the use of more than one method for gathering data.

The fourth of these, as the preceding discussion implies, is the most common of the meanings of the term. Denzin drew a distinction between *within-method* and *between-method* triangulation. The former involves the use of varieties of the same method to investigate a research issue; for example, a self-completion questionnaire might contain two contrasting scales to measure emotional labor. Between-method triangulation involved contrasting research methods, such as a questionnaire and observation. Sometimes this meaning of triangulation is taken to include the combined use of QUANTITATIVE RESEARCH and QUALITATIVE RESEARCH to determine how far they arrive at convergent findings (see MULTIMETHOD RESEARCH). For example, a study in the United Kingdom by Hughes et al. (1997) of the consumption of “designer drinks” by young people employed both structured interviews and focus groups. The two sets of data were mutually confirming in that they showed a clear pattern of age differences in attitudes toward these types of alcoholic drinks.

Triangulation is sometimes used to refer to all instances in which two or more research methods are employed. Thus, it might be used to refer to multimethod research in which a quantitative and a qualitative research method are combined to provide a more complete set of findings than could be arrived at through the administration of one of the methods alone. However, it can be argued that there are good reasons for reserving the term for those specific occasions in which researchers seek to check the VALIDITY of their findings by cross-checking them with another method.

EVALUATION OF TRIANGULATION

The idea of triangulation has been criticized on several grounds. First, it is sometimes accused of subscribing to a naive REALISM that implies that there can be a single definitive account of the social world. Such realist positions have come under attack from writers aligned with CONSTRUCTIONISM and who argue that research findings should be seen as just one among many possible renditions of social life. On the other hand, writers working within a constructionist framework do not deny the potential of triangulation; instead, they depict its utility in terms of adding a sense of richness and complexity to an inquiry. As such, triangulation becomes a device for enhancing the credibility and persuasiveness of a research account. A second criticism is that triangulation assumes that sets of data deriving from different research methods can be unambiguously compared and regarded as equivalent in terms of their capacity to address a research question. Such a view fails to take account of the different social circumstances associated with the administration of different research methods, especially those associated with a between-methods approach (following Denzin's [1970] distinction). For example, the apparent failure of findings deriving from the administration of a STRUCTURED INTERVIEW to converge with FOCUS GROUP data may have more to do with the possibility that the former taps private views as opposed to the more general ones that might be voiced in the more public arena of the focus group.

Triangulation has come to assume a variety of meanings although the association with the combined use of two or more research methods within a strategy

of CONVERGENT VALIDITY is the most common. In recent years, it has attracted some criticism for its apparent subscription to a naively realist position.

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