

The interpretation of the data: the discursive examination

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The objective of this step is to give meaning to the data. Meaning is a mental construction, carried out by the researcher. "The meaning within the action most often comes 'after the fact'. It is thus not immediately apparent but is attributed *a posteriori* through interpretation. [...] The task thus falls to the researcher, through his or her analysis, to uncover the meaning that the actor has constructed based on his or her reality." (Blais and Martineau, 2006). The value of qualitative research lies to a great degree in the capacity of the researcher to give meaning to data (Savoie-Zajc, 2000). To some extent, the act of extracting this meaning thus allows one to go 'beyond' what the raw data says *a priori* (Denzin and Lincoln, 2005).

For example, to reread relationships among groups of stakeholders in reference to a theory of organizations and to interpret this as a case of a 'social arena' (Long, 1989) in which a conflictual process between strategic interest groups temporarily pushes aside pre-existing social alliances based on other mechanisms of cohesion (family, political orientation, professional relations), this is to give meaning and to interpret observations.

Concretely, the interpretation of data requires the selective reading of the data **corpus** using an analysis grid. These grids are chosen or constructed during the initial theoretical calibration stage but also are added to and changed during the survey and during data interpretation, because interpretation "cannot be confined to incorporating new information (new empirical data) into an old model." (Paillé P, 2006a).

The two ways to read classed empirical data by theme complement each other:

- In a **vertical reading** of the matrix, or by theme, fragments of speech are compared (thus to a certain extent the stakeholders, at least in terms of the way they presented themselves to the interviewer!). This first comparison of fragments covering a single theme and extracted from different interviews allows one to identify groups based on similarities, convergences, divergences, or oppositions, to identify relationships (of conflict, competition, and complementarity) between these groups.
- A **transversal reading**, freely passing from one theme to another, one interview to another, through an association of ideas, allows some liberty. By facilitating the creative side of interpretation, a meaning can be constructed from the ensemble of the corpus, and an overall line of interpretation can be found. If the objective of the researcher is a typology of stakeholders interviewed, this also is possible by weighing the distinguishing features of the statements collected.

Some subjectivity enters into the process: classing, decisions concerning what is important or significant, choices of categories of analysis emerging from the reading of data. The simple act of "deciding" the importance of a theme or a discriminating factor in the constitution of a typology is an act of interpretation by "calling a phenomenon perceptible through a conceptual reading -- developed by the researcher -- of research material" (Blais and Martineau, 2006). The more these categories of analysis and "discriminating factors" are conceptual, the more they are operational (effective in advancing the work, meaning revealing a social function, constructing explanatory models)¹.

However, if the so called "data interpretation" step of concern here is the perfect moment to construct meaning, this mental operation is not totally missing from the other steps in the survey: construction of the study topic and problem statement, developing the interview guide, choosing the people to interview, conducting the interview with requests to go into greater depth or, in contrast, abandon an avenue of inquiry. During these stages of the survey, the researcher makes numerous choices - conscious and unconscious - around an explicit theoretical framework or in reference to an idea of the meaning to give to his or her observations. These are the multiple facets of the work of a social science researcher, the "protagonists of interpretation" as they are called by Pierre Paillé. (Paillé P 2006a ; Paillé P, 2006b).

"The personal role of a researcher is a resource, notably during the conduct of the interview - in his or her ability to prompt the interviewee to speak, but also in the continuous development of the sampling - made possible by the meetings s/he generates, the information s/he gathers at times by chance, and which guides him or her to other sources. However, it also is a source of bias. Most of the data are produced through his or her interactions with others, through the mobilization of his or her own subjectivity, through his or her own "setting the stage". These data thus incorporate a significant "personal factor". This bias is inevitable: it must be neither denied (positivist attitude) or exalted (subjectivist attitude). It can only be controlled, sometimes used, sometimes minimized. (Olivier De Sardan J-P, 2008).

Grounded theory requires the elaboration of concepts and theoretical models that are portable -able to be transferred to other research situations - through progressive abstraction, working exclusively from field data and following an inductive approach. "The researcher must never cease comparing the state of his or her analysis to the data s/he collects and, depending on the thoughts this comparison provokes, redirect the collection of new data." (Herpin, 2010). Interpretation is used heavily during the collection of data, notably to construct the sample.

Consequently, surveys using semi-structured interviews usually combine:

- a **hypothetico-deductive approach**: making hypotheses, or more often, formulating "relevant" research questions with reference to a pre-existing theoretical framework.²

¹ To review these concepts, consult the module: "Constructing the problem statement" and the glossary (concepts, categories of analysis).

² See the module: "Constructing the problem statement".

- and an **inductive approach**: modification, construction of categories during the survey, reading raw data during processing and classing, or when seeking meaning. This approach allows one to forge tools such as categories of analysis, which leads to a sequence of iterative steps: after an initial thematic classification with pre-existing categories of analysis, chosen from the theoretical models available, and after having re-classed the data, reorganized the assemblages, and modified the pre-existing models.

The semi-structured interview is thus a back and forth process between the elements taken into consideration during the construction of the problem statement and the theoretical elements that the researcher constructs based on his or her data.

Plausibility and over-interpretation

Interpretation in the social sciences is not purely psychological (aiming to decipher the motivations of the stakeholders interviewed); it relies on the stakeholder's knowledge of the world (value system, social integration, technical skill...) and is not based exclusively on knowledge of the stakeholder's personality.

As a procedure that is constructed, non-intuitive, and accessible through reflection, interpretation also is not a free hermeneutic effort producing interpretations liberated from links with empirical data. While the results of an interpretation are not "verified proof" of hypotheses - as would be the case of statistical results, for example - they nonetheless must check the hypothesis formulated at the beginning of the research. To do so, they must be well argued and **plausible**, "based on the presence of more or less raw data, in the presentation of results (report, article, thesis...). Instead of the statistical tables produced in surveys with questionnaires, the presentation of the results of a semi-structured interview will cite the statements collected in interviews, thereby furnishing, beyond abstract models, traces and evidence of data produced during the field stage." (Olivier De Sardan J-P, 2008).

However, stereotypes and ideologies colour the regard of the researcher at every stage of the survey. To avoid the traps of over-interpretation, one must hunt out the preconceptions that orient interpretive thought and combat methodological laziness by developing a sustained reflective appraisal of the choices linking the survey process.

Over-interpretation, giving too much meaning to empirical data, is manifested through a gap, an imbalance between the empirical data and the conclusions. Five "forms of over-interpretation" resulting from diverse forms of "violence" done to data are common (Olivier De Sardan P, 1996):

- **reduction to a single factor**: everything is explained by ethnicity, gender, social class, family type, education level...
- an **obsession with coherence** that seeks to minimize contradictions, differences, counter-examples to produce an explanatory model accompanied by numerous tailored made indices or examples.
- **inappropriate significance**: due to linguistic incompetence, one attributes to an "indigenous" thought motivations that do not belong to it; it also is a shift in meaning

produced by an emphasis or change in register in the denomination of acts or categories of analysis. It also may be a gap between the meaning given by the researcher and the meaning experienced by stakeholders living in a place and time far from that of the researcher (case of anachronisms).

- **over-generalization**, which uses a few indicators to infer a model that is fragile because its scope is too broad; it is the production of a lopsided interpretation in relation to the information available or used.
- Making a scoop on the hidden meaning which bases an argument on the discovery of a "hidden reality" for which there is no empirical evidence.

"The human spirit has the tendency to filter information, retaining above all what confirms his or her hypotheses by setting aside counter-examples. This is why, at the end of a study, it is appropriate to undertake a rigorous exercise in critical analysis, for example, by returning to the corpus and systematically seeking exceptions, negative cases, objections to one's theory (one's explanation), which allows, of course, to solidify the latter and to hold a more nuanced discourse." (Paillé P. , 2008).

The separation between interpretation and over-interpretation is difficult to make. All interpretation assume a risk because it involves giving extra meaning in relation to what the empirical data say, but without going overboard on the meaning. This risk may be minimized by observing methodological rigor at every step of the survey process. Over-interpretation may still be fought through discussion between colleagues of survey results or, earlier in the cycle, by work with a multi-disciplinary team combining different viewpoints.

To limit the risks of over-interpretation, why not use statistical processing procedures? Two arguments may be made to respond to this question:

1. To go beyond simple sorting (uni-dimensional analyses) and cross sorting (bi-dimensional analyses), the most conventional multi-dimensional statistical descriptive methods are factor analysis methods. These consist of seeking a limited number of factors that best describe the data considered.

Principal component analysis (PCA), Correspondence Analysis (CA) and Multiple Correspondence Analysis (MCA) are purely descriptive methods, meaning they do not assume, a priori, an underlying probabilistic model (describing data as being the product of a law of probability) (Baccini, 2010). They therefore do not give meaning to empirical data, or interpret them.

2. In an inductive survey using semi-structured interviews, a constructivist sampling procedure is needed to establish a typology of stakeholders useful in clarifying the study topic. In a constructivist sampling procedure, the sample is built gradually as new potential sources of information are discovered. The interviews end when **saturation** is achieved: when the interviews no longer provide new information.³ The sample is not built based on a sampling frame respecting statistical representative rules. Quantitative analyses are not applicable.

³ See the notions of iteration/triangulation/saturation in the module "Choosing the survey method and preparing the semi-structured interview".

In the typologies obtained by interpreting a corpus of data (processed manually or with a computerized classification tool), the results describe the diversity of the population in relation to the research questions, but give no statistical weight to each category. "One must not make the field survey say more than it has to say. A survey can propose a description of the main perceptions held by the main groups of local stakeholders regarding a given problem, no more, no less. A survey also can describe the space of diverse reasons for action or diverse strategies implemented in a given context, no more, no less. A survey will say nothing about the quantified representativeness of these perceptions or strategies, except to call for another methodological configuration." (Olivier De Sardan J-P, 2008)

Combine methods?

THE ADVANTAGES OF A MIXED SURVEY METHOD⁴

A mixed method is a combination:

- of a qualitative survey conducted through semi-structured interviews
- and a quantitative survey conducted with a questionnaire.

To be worthwhile, this combination must be based on a strong theoretical link between the two methods: the same theoretical framework, complementary research questions. This approach allows:

- data to be compared
- complementary information to be obtained
- the limits of each of the tools to be mitigated.

Certain conditions must be respected:

Data produced by questionnaires and interviews are collected and analysed by using the appropriate techniques of quantitative and qualitative methods and by taking into account the criteria of rigor or scientificity that applies to each of them. The quality of the entire approach is based on the quality of each of the methods.

ADVANTAGE OF COMBINING INTERVIEWS AND QUESTIONNAIRES:

It generally makes more sense to begin with qualitative research and semi-structured interviews during the exploratory stage, and then turn to quantitative research and closed questionnaires in accordance with the gradient noted by R. Ghiglione and B. Matalon (2004) and presented in the video, "Choice of the survey method". However, a quantitative research stage can call for a return to a renewed qualitative research stage.

⁴ See the feedback of M. Mutel: videotaped testimony in the module "Choosing the survey method [...]", lesson 2.

	Types of interviews		
Types of research	Open	Semi-structured	Closed
Exploratory	↕		
In-depth	↕	↕	
Check		↕	↕
Control			↕

Although we recommend always passing through a qualitative research stage before proceeding to the quantitative stage, we advise researchers who have started their research directly with a quantitative stage to think carefully about their work and to engage in a qualitative research stage to overcome the limits of quantitative questionnaires, notably by considering the following elements.

A questionnaire has certain limits:

- Respondents can be led to respond in a socially acceptable manner
- The questionnaire cannot, alone, lead to a sufficiently in-depth understanding of a complex social phenomenon.

Interviews combined with questionnaires contribute the following elements (Therriault, 2011):

- Some nuances with regard to data drawn from the questionnaire
- Explanations of responses given in the questionnaire
- Complements and illustrations of these responses
 - an more in-depth analysis of data from the questionnaire
 - an estimation of the authenticity of responses given in the questionnaire.

The data drawn from the interviews thus supports, or sometimes provides nuance, to the data obtained through the questionnaires, allowing corroboration of the data collected, and thus a fuller understanding of the study topic.

In return, a discriminating analysis based on the data drawn from the questionnaires allows one to select people presenting contrasting points of view to take part in the interviews.

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