

## **QUALITY AND QUANTITY REVISITED**

Juan Ignacio Piovani (Universidad Nacional de La Plata - CONICET, Argentina)

Fernanda Beigel (Universidad Nacional de Cuyo - CONICET, Argentina)

### **Abstract**

This paper attempts to discuss the qualitative methodological approach of Jack Katz in its historical framework of production. In doing so, we aim to analyze the actual relevance of these discussions and their impact in the qualitative-quantitative dilemma.

Revisiting Katz's ideas and complementing them with some critical remarks about the limits, misuses and biases of the four R's (representativeness, reactivity, reliability and replicability) in quantitative research implies a significant contribution to the understanding of qualitative research's value in its own terms. In many ways, Katz's methodological ideas anticipated later developments.

### **Resumen**

Este trabajo se propone discutir el enfoque metodológico cualitativo de Jack Katz en su marco histórico de producción. De este modo, se pretende analizar la relevancia actual de estos debates y su impacto en la problematización de la dualidad "cualitativo-cuantitativo".

Revisitar las ideas de Katz y complementarlas con algunos comentarios críticos sobre los límites, usos indebidos y los sesgos de las cuatro erres (representatividad, reactividad, fiabilidad y reproducibilidad) en la investigación cuantitativa supone una importante contribución a la comprensión del valor de la investigación cualitativa en sus propios términos. En muchos sentidos, las ideas metodológicas de Katz anticiparon desarrollos

posteriores.

Key Words:

Qualitative research, Jack Katz, representativeness, reactivity, reliability, replicability

Palabras Clave:

Investigación cualitativa, Jack Katz, representatividad, reactividad, fiabilidad, reproducibilidad

We have been convoked to write a critical note on Jack Katz's (1983) "A theory of qualitative methodology: the social system of analytic fieldwork", published for the first time in 1982. In these thirty years past, many things have been said on qualitative research, and the main issues discussed by Katz have been profusely addressed, and may even appear overcome. However, qualitative research is still frequently examined with quantitative criteria, and the tasks proposed by Katz can still support qualitative research programs nowadays. While we cannot avoid the fact that every reading is done from its present, we will make the attempt to place the text within its historical framework, in the first place, in order to analyze, in the second place, its relation to current debates. Finally, we will examine his contribution to analytic field research and his perspective on evaluation.

Historically situated, Katz's paper was published at a time in which qualitative research was gaining increasing recognition, but its legitimacy was not yet fully established within the scientific community. As shown in Piovani *et al.* (2008), from the mid seventies on, we have witnessed a rapid growth in the publication of papers portrayed as qualitative in methodological terms. But in the early stages of their (re)development, following the crisis of the so-called orthodox consensus of the social sciences (Giddens 1979), the qualitative approaches were still seen as impressionistic, if not simply as anti-scientific, by many mainstream social scientists. In that context, the debate between quantitative and qualitative methods had a strong epistemological stance: they were considered as antagonistic models of the research process, each of them being the realization of the underlying assumptions of incommensurable paradigms (Bryman 1988).

Under these circumstances, which are defined by Pawson (1994) as methodolatry, the detractors of qualitative research used to portray it as scientifically inconsistent,

incapable of complying with the most basic imperatives of the scientific method. In turn, the most established quantitative methods were criticized as the expression of a scientificist—reductionist—and politically conservative approach to social phenomena.

Katz's paper was published when the transition towards technical arguments in the qualitative vs. quantitative debate (Bryman 1988), that gave place to the understanding of each methodology in terms of their respective advantages and disadvantages for the production of knowledge, was largely still to come. Though, as was only to be expected, Katz addressed some key issues related to the methodological weaknesses of the qualitative approach, as usually put forward by their quantitative-oriented critics. In fact, his analysis of the four "R's" (representativeness, reactivity, reliability and replicability) that haunt participant observers in Sociology has to do precisely with some of the typical critiques faced at that time by the qualitative strategies. Katz's argument, as to the inadequacy of those scientific criteria developed within the Positivistic tradition, for the assessment of the qualitative approaches, will later become a sort of "classic", but was probably groundbreaking by that time.

Katz's strategy consists on discussing these methodological issues, while illustrating them with comments drawn from his own field study on civil lawyers for the poor. In so doing, he aims at looking 'for the methodological strength of qualitative fieldwork not by comparing it with an image of research from fixed design [quantitative] but by examining the social relations which may be built up with research subjects, readers, and subsequent researchers by the fieldworker's conduct, from initial entry to the final write-up' (1983: 130).

The likely starting point for Katz reflections is a paradox: the sociological

community frequently tends to neglect the rationale for qualitative methods, or even to deny their scientific status, and still, the results of the qualitative field research are regarded as valuable. This poses the following question: ‘must there not be methodologically valuable empirical implications of the qualitative field researcher’s behavior?’ (Katz 1983: 130).

One aspect that seems particularly interesting in Katz’s paper, unlike other authors that have also questioned the appropriateness of judging qualitative research through quantitative standards, is that he also maintains that fixed designs, typical of surveys and experiments, cannot govern fully the social relations that arise in the research process, thus posing many questions in relation to their capability to actually comply to the four “R.s”.

However, he just presents general concerns about this, without deepening the argument, nor treating each concept per se (representativeness, reactivity, reliability and replicability) in detail, regardless of the methodological orientation. Even if he doesn’t engage in this discussion, the very fact that he mentions some of the forceful questions that have been raised with regard to the four “R’s” in quantitative research is very significant, since “common sense quantitative methodology” tends to portray an non-problematic image of satisfactory fulfillment of these criteria, taking them for granted and therefore obscuring some key issues surrounding the research process. In the following paragraphs, we will approach each of these methodological terms, revisiting Katz’s ideas, and complementing them with some critical remarks about the limits, misuses and biases of the four “R’s” in quantitative research.

1) Representativeness is altogether a misleading term. If we consider for instance

the survey, one of the most typical quantitative strategies: how can anyone declare the representativeness of a sample, or of the results drawn from it, without knowing the phenomenon under study? But if the phenomenon is known, as to make it plausible for the researcher to judge representativeness, why conduct the research in the first place? In any case, what a researcher can know is the representativeness of the sample, or of its results, with regard to a series of characteristics that are known beforehand, and this will play a significant role only if those characteristics are closely related to the phenomenon under study.

Marradi (1997) has thoroughly explained why the concept of representativeness is inadequate, even in quantitative research that is based on probabilistic sampling. As a matter of fact, sampling theory proves that the results of a study can be generalized within a calculable margin of error. But this does not turn the sample, nor its results, representative per se. At best, we have to consider that representativeness is an aspiration that will be reached more effectively through probabilistic sampling, depending on the method of selection and on the size of the sample. Under specific conditions, we might have an immense chance that the sample will be, eventually, representative; but this cannot be taken for granted, nor can it be assessed beforehand. For this reason, it might be more precise to speak of “probability of representativeness”.

As far as the results of the study are concerned, the representativeness of the sample would not be enough either, since various non-sampling errors and biases may occur, distorting the results themselves. In short, yet not denying its relevance within the context of scientific research, it must be noted that in “common sense” quantitative methodology the term ‘representativeness’ has often been flawed, abused or misused, underpinning an

unjustified scientificist rhetoric.

Also, as Katz (1983: 136) underlines, ‘in attempts to establish statistical significance, the more the researcher sees data as heterogeneous (the greater the number of variables examined in a given number of data), the less likely it is that levels of significance will be reached.’ A similar situation will occur when the researcher attempts a more detailed description of a given social phenomenon, through in depth analysis of variability across different profiles of the subjects under study. The more specific the profile of the subjects, the smaller the resulting subsample, affecting increasingly the margin of error and thus the representativeness of the results, unless the sample itself be increased. Consequently, ‘statistical evidence of representativeness depends on restricting a depiction of qualitative richness in the experience of the people studied’ (Katz 1983: 137). This problem, that has been referred to as “semantic price”, implies that quantitative methodology is somehow ambivalent: it benefits from a set of more technical — impersonal— research instruments, but as the research process becomes more technically controlled (and more reliant on technical operative instruments), the higher the semantic price it will pay, affecting the adjustment between the phenomenon under study and its scientific representation.

When it comes to representativeness in qualitative research, Katz turns to a classical principle of analytic induction —and of field research in general—: the deliberate search of negative cases. In so doing, the researcher is prompted to advance rival hypotheses, expanding eventually ‘the domain to which an explanation validly can be generalized’. As Katz states, ‘analytic research rests the external validity of a study on its internal variety. The more differences discovered within the data, the greater the number of possible

negative cases, and thus the more broadly valid the resulting theory' (Katz 1983: 135). This also implies applying what is currently referred to as purposive or intentional sampling, meant to cover different profiles attached to social actors, taking into account heterogeneity, marginality, typicality, etc. (Marradi, Archenti & Piovani 2007). The author acknowledges criticisms regarding the fact that if a site is distinctive in the heterogeneity of its members and in the drama of its historical change, this makes it unrepresentative. But he believes that the deliberate overrepresentation of everyday life in the place actually observed, through the strategy of the negative case, will better represent social life outside the research site.

2). Reactivity is somehow inevitable in any type of social research. It is evident, and for this we could make thousands of examples drawn from everyday social interaction, that the presence of a stranger -in our case the researcher- will affect the behavior and the routines of those who make part of the phenomenon under study. But qualitative research, and participant observation in particular, which tends to be carried out in natural settings, and lasts for long, may allow for reactivity to diminish, as the researcher gains more sophisticated social skills to interact with the group under study. Also, as Katz (1983: 138) states, it 'creates opportunities for testing the meaning to members of the researcher's presence.'

Katz reckons that the particular fashion in which participant observation is carried out within the tradition of analytic method, makes it particularly reactive. This because the researcher will "constantly change the content of questions or the angle of observation; and as a result, any difference in the behavior of research subjects could be attributed to a



change in the researcher's behavior" (ibid: 137). However, Katz believes that precisely in this lies the strength of analytic field research in terms of reactivity: "In contrast to research that attempts to fix the researcher's behavior with a design for gathering data, the analytic field method makes valuable substantive data out of the responses of members to the researcher's methods" (ibidem)

In this sense, the impact of reactivity may decrease over time, while other concerns regarding field relations arise. But in quantitative studies, and particularly in the experiments, where we find serious issues concerning ecological validity (in the sense of lack of a "naturalistic" access to social phenomena), reactivity seems to be quite problematic, even if much of the methodological literature has disregarded it, probably due to the apparent neutrality and detachment of the techniques involved in such research processes. Also in surveys, reactivity may play a significant role. In fact, what is usually referred to as "social desirability" in the subjects' responses to a question, is a form of reactivity, since it might be the result of a change or adaptation in discourse due to the presence of the researcher, and to the way in which she/he is perceived by the respondent. Moreover, this problem will also affect reliability, the issue we will analyze next.

3). Reliability is one of the key conceptual instruments of the quantitative approach. The idea had been already relevant in Astronomy for a long time when reliability, as such, was introduced in the Social Sciences by Ebbinghaus in the late Nineteenth Century. While performing psychometric evaluations of school children, he noted that by that time it was customary to determine the children's intelligence, and other attributes, simply by asking the opinion of the teachers, and realized that this method could not convey a stable

measure, equivalent to those of other variables for which already existed more sophisticated operational definitions and instruments of measurement.

Over the years, several technical means have been devised in order to assess reliability, many of them based on the idea that repeated measurements, if bearing similar results, could be taken as proof of reliability. Hence, the concept of reliability has been commonly redefined as consistency of the data (between different measures, or internally, within one measurement, as in the case of the split-half test). But as a matter of fact, consistency is not more than a mere indicator of reliability -and for many not a very good one-, whereas in strict sense, reliability is defined more precisely as a property of the relation between an operational definition and the results it produces. The key question would be: how capable is the operative definition of registering the real situation of a subject with regard to the variable that such definition operationalizes?

Many believe that the technification of the process for determining reliability has ended up in a serious disregard of the substantive meaning of reliability. In the end of the day, researchers are often focused on obtaining good measures in the reliability tests, instead of concentrating their efforts in representing the phenomenon under study with as much fidelity as possible. As underlined by Zetterberg (1954), we are taught to confidently rely on the reliability tests, but in so doing, researchers feel there is no need to face the complex tasks that are really involved in assessing the reliability of their data.

Katz is aware of the limits of reliability in quantitative research. However, in some passages of his paper there seems to be confusion between reliability and validity, since he points specifically to the gap between the indicator and what it indicates. Apart from this, the most interesting aspect of his discussion, is the suggestion that the difficulties to verify

reliability in field research do not necessarily imply a methodological weakness: ‘From a sociological perspective on the relation between researcher and reader, the analytic method confers on readers unique powers to make their own judgments on reliability from independent encounters with the data’ (Katz 1983: 147), posing the question if this is not preferable than the statistical assessment of reliability.

4). Replicability has been a key concept within the context of the standard view of science, and this for several reasons. In the first place, it is assumed that there is sort of positive correlation between replicability and scientificity, so that less replicable studies will be more impressionistic and somehow non-scientific. In other words, it is supposed that research more reliant on impersonal procedures will be more likely to comply to the principles of the “scientific method”. Also, if results obtained in different replications of a given piece of research are identical, the conclusions become more robust and valid. Finally and closely related to the former consideration, replication is important in terms of gaining inter-subjective consensus over a certain phenomenon, what in turn is understood as a form of objectivity.

In this sense, it seems quite obvious that ‘to the extent that researchers pre-fix their decisions for gathering data, they can easily present readers with a format for testing findings by repeating the study’ (Katz 1983: 144). Therefore, quantitative research, and in particular experiments, but also surveys, have a clear strength in terms of replicability when compared to qualitative research. In fact, it has been argued that qualitative research is specially weak when it comes to replicability, both because it lacks structured designs that guide the decisions along the research process, what makes it more flexible (Marradi,

Archenti & Piovani 2007) and interactive (Maxwell 1996), and because is heavily reliant on the personal knowledge of the researcher. However, even if customarily neglected, personal knowledge and tacit dimensions (Polanyi 1958) also have an important role in quantitative research, turning replication not impossible, but still more problematic that is usually acknowledged.

Katz manages to clearly identify some of the key problems involved in the replicability of qualitative field research: procedures to gather data are often changed in order to find negative cases, and ‘innumerable *ad hoc* judgments are made in the field’, just to mention a few. But these issues become less relevant if replicability is understood in non-traditional terms. As the author points out, ‘despite these facts, the analytic field research strategy promotes relations with other researchers that facilitate the subsequent testing of substantive findings...’ (Katz 1983: 145). In short, for Katz the replication of qualitative research has the potential of being more “cost-effective“, so to say, than its quantitative counterparts. And this, because ‘the costs of subsequently testing qualitative field research findings are relatively low [and] the rewards are relatively high” (*ibidem*), whereas the exact replication of a quantitative study runs a high risk of producing no innovative results, ‘becoming nothing more than an unpublishable confirmation’ (*ibidem*).

Finally, Katz addresses the issue of the researcher’s social relations and the evaluation of analytic fieldwork. He argues that analytic approach to fieldwork breaks down the separation between method and substance, interacting with both levels along the research process. This issue rises up a new perspective on evaluation, because reader and researcher act within a system of social relations, so the former can make evaluations and

the latter can judge how well he/she is doing. Accordingly, 'readers can assess how richly the researcher has perceived internal variation in the data; how radically the researcher varied his approaches to subjects; the density into which data and analysis have been interwoven; and the practical ease of testing the theoretical claims on new data' (Katz 1983: 148). However, Katz fails to acknowledge the place of language and writing in this process of assessment. In recent decades, much has been debated as to the relevance of the text and its authorship in qualitative research (see for example Clifford & Marcus 1986; Geertz 1988). Forceful questions have been posed regarding how the researcher rationalizes the whole research process in the text. Also, it has been shown how "otherness" is textually constructed. In short, the writing and rhetoric strategies used by the researcher are key to the appraisal of his/her work. Therefore, Katz's suggestion concerning the role of the reader in evaluation is somehow naive, since it seems to assume that writing, reading, interpreting and assessing are rather straightforward practices, disregarding the above-mentioned problematic issues.

Nonetheless, these critical remarks do not diminish the appraisal of Katz's paper. Considered in the context of its publication, it was a significant contribution to the understanding of qualitative research's value in its own terms. In many ways, his methodological ideas anticipate later developments. For instance, his awareness of the role of research subjects and readers in the process of knowledge construction, gives some hints of what is currently known as "epistemology of the known subject" (Vasilachis 2006). Despite the many years past, his critical perspective on the assessment of qualitative research, stressing its relative autonomy with regard to quantitative standards, seems still relevant. And this because there still prevails a sort of common sense in methodology, that

tends to universalize such standards irrespective of the rationale of each methodological strategy. However, it is also important to remark that many developments have taken place within the field of qualitative methodology, which have broadened our understanding of its foundations and diversified our set of instrumental and operative instruments. Last, but not least, we have to acknowledge that many forms of mixed methodologies have been proposed and practiced, changing completely the way in which we understand the debate between qualitative and quantitative methods.

## REFERENCES

- Bryman, A., 1988, *Quantity and quality in social research*. London: Routledge.
- Clifford, J. and Marcus, G., 1986, *Writing culture: the poetics and politics of ethnography*. Berkeley: University of California Press.
- Geertz, C., 1988, *Works and Lives: The Anthropologist as Author*. Stanford: Stanford University Press
- Giddens, A., 1979, *Central problems in social theory. Action, structure and contradiction in sociological analysis*. London: Macmillan.
- Marradi, A., 1997, 'Casuale e rappresentativo: ma cosa vuole dire?', P. Ceri, ed., *Politica e sondaggi*. Turin: Rosenberg & Sellier
- Marradi, A., 2002, 'El método como arte', *Papers. Revista de Sociología*, Vol. 67, pp. 107-127
- Marradi, A.; Archenti, N. and Piovani, J. I., 2007, *Metodología de las ciencias sociales*. Buenos Aires: Emecé.

Maxwell, J., 1996, *Qualitative Research Design. An Interactive Approach*. Thousand Oaks: Sage.

Pawson, R., 1994, "Quality and quantity, Agency and structure, mechanism and context, dons and cons", *World Congress of Sociology*. Bielefeld: ISA.

Piovani, J. I. *et al.* (2008), 'Producción y reproducción de sentidos en torno de lo cuantitativo y lo cualitativo en la Sociología', N. Cohen and J. I. Piovani, eds, *La metodología de la investigación en debate*. La Plata: Edulp – Eudeba.

Polanyi, M., 1958, *Personal Knowledge. Towards Post-Critical Philosophy*. London: Routledge & Kegan Paul.

Vacilachis, I., 2006, 'Identity, Poverty Situations and the Epistemology of the Known Subject', *Sociology*, Vol. 40, pp, 473-491

Zetterberg, H. L., 1954, *On Theory and Verification in Sociology*. Totowa: Bedminster Press.