

Qualitative or Quantitative? Data Archiving in Documentation, Research and Teaching

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Key words:
archiving

Abstract: In this article some of the conceptual and technical issues relating to data archiving in relation to documentation, research, and teaching are discussed. From a meta-perspective, there are a number of similarities between qualitative and quantitative data treatment but, on closer inspection, some important differences can be identified, which are due in part to different goals of each approach, and in part to different technical demands inherent in the diverse data. Overall, however, the proximity and complementarity of both approaches reveal important synergies and possibilities in research and teaching, for which archives can play an instrumental role.

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1. Introduction

Quantitative and qualitative approaches, in terms of content, are often presented antithetically. However, a closer look reveals that such an opposition is certainly an exaggeration, not to say an error. I would therefore prefer to focus on the proximity and the complementarity of these approaches in this article. This possible proximity should not limit itself to an arbitrarily chosen theme, but rather has to be grounded on varied levels in order to be significant. The analysis has therefore to be carried out at the crossroads of diverse areas like research, education and data archiving. [1]

The last point, data archiving, presents another characteristic that needs to be discussed in a perspective, which puts qualitative and quantitative data in parallel. Not only does it need to ensure a worldwide distribution, but at the same time it must also remain close to users: this challenge to be global and local at the same time is effectively the same for both types of data. But before going into this, I

would like to emphasize another central point, which is even more crucial for the data archives: the importance of documentation. This also will apply to the quantitative as well as the qualitative perspective. [2]

2. Is Documentation a Methodological Requirement?

Is documentation a methodological requirement and therefore a condition of a scientific process? Defining the scientific character in social science has been the subject of innumerable previous debates and this is not the place to add a further contribution to those. Nevertheless, the transparency of the process of data production is a basic requirement; it is this, which ensures the possibility of a scientific debate. And it is this, which allows a certain amount of reproducibility. [3]

From the point of view of quantitative research, it is not a coincidence that scientific publications increasingly require that the data relevant to an article be available through archives. Of course, this ensures the possibility of reproduction of the analyses suggested, but the treatment by an archive should also guarantee the seamlessness of the whole data production process. [4]

Consequently, documentation is at stake. Who would dare to publish an analysis without knowing the questionnaire that was used? How was that questionnaire set up or translated, if necessary? And would it not be convenient to know the context of the production of the data? What measures were taken to minimize biases, to improve the quality of answers and to train the investigators? [5]

From a methodological point of view, documentation is a crucial element to ensure the quality of the data gathered. These questions also underline the fact too often forgotten in quantitative analyses that data are "produced," and that it is important to preserve the traces of this production.¹ [6]

These comments apply equally to the qualitative approach. Many quantitative or qualitative investigations are based on interview techniques that may be described. From this viewpoint, then, the problem is hardly any different according to the nature of the data. The quality of the research and its scientific character requires seamlessness and documentation. This is perhaps even more important for the qualitative researcher where the techniques of data collection and analysis are less standardized. This particular requirement can be found across different fields. [7]

1 Qualitative data is the fruit of a production process, but the researchers who work in this line most often collect the majority of the information themselves and can therefore be more conscious of the restrictions and characteristics induced by this moment of scientific research.

3. Three Fields

Data archiving ultimately extends across teaching, research and archiving itself.² Considering the education pole, acquiring the basic tools would not be feasible without direct reference to, on the one hand, data, but on the other hand to current themes and theoretical preoccupations. Should data archives wish to be part of the formative process, they need to integrate themselves into current scientific perspectives. [8]

Similarly the relation to research is equally problematic. In order to fulfill their duty and be recognized, archiving institutions must be informed of the way in which researchers proceed. At the same time, they are not defined in terms of "research," but in terms of "service." In other words, archiving institutions must be acknowledged by researchers while also being able to satisfy everybody's needs. From this perspective, methodological research provides a broad and solid basis to integrate data archives in the research world. [9]

3.1 Archiving

Qualitative data archiving raises technical issues due to the multiplicity of existing formats. Photographs, videos and interviews, for example, are being recorded using a variety of different models. Standardization has not yet reached the level it has in the field of quantitative data, where the reliable ASCII format sometimes constitutes the ultimate exchange norm.³ [10]

Even if such a perspective is perhaps correct, it is only one part of the whole. For an archive, the issue is not only storage and conservation of the data themselves, but its capacity to be used rather than merely stored, in other words, the aim is publication and not only conservation. This implies, once again, that we look at documentation itself, and put a special emphasis on distribution to begin with the publication of catalogues. [11]

Parallels drawn between quantitative and qualitative data therefore become even stronger because data description and their subsequent publication obey analogous rules. In addition, the technical tools used to publish them are similar.⁴ [12]

3.2 Teaching

At the level of teaching, ensuring information flow could be done by organizing short courses and field trips, and by creating data sets, which could be used as methodological and substantive "examples." That would indeed make it possible

2 At the risk of generalizing, an archive could sometimes tend to a documentary perfection likely to distance it from its users. It is thus essential to relate to them, whether they represent the field of teaching or that of research. Besides, research can also be disconnected from teaching or the need to preserve its assets, just as teaching can forget its most recent discoveries.

3 Current interest in the format XML can be seen as a way of keeping data legible and different to proprietary formats, while adding to it some structuring elements.

4 The reference here is probably the DDI (Data Documentation Initiative) associated with the ICPSR at the University of Michigan and based on XML.

to ensure the methodological information flow between teachers and to strengthen the quality of the training. Moreover, that would also promote secondary data analysis. [13]

At first glance, this conception applies as much to quantitative data as it does to qualitative data. It might be even more relevant to fields where the enforcement of the "rules" is at stake when it comes to their own legitimization. In other words, if we want to establish the idea that methodology is as demanding for qualitative analyses as for quantitative ones, the creation of exemplary data sets is essential. It is indeed a question of showing the benefits, but also the limitations, of the adopted approach, and of sensitizing students to the consequences of researchers' decisions on the quality of the data obtained and the possible interpretations. [14]

Such exemplary data sets also enhance the profile of certain fields where research has already profited from the contributions of the secondary analysis. Let us mention, for example, life history, where the combination of methods is particularly fruitful. But it could also show synergies between qualitative and quantitative methods, for validation processes or studies on the impact of the context in an interview. [15]

3.3 Research

If we have seen the need for documentation in teaching (where it constitutes the basis of the training for a future role of researcher), documentation is equally important in research. And indeed, beyond the requirements of transparency and reproducibility, which we previously discussed, the documentation and the possibility of access undoubtedly constitute the foundation of a "good methodology." [16]

Methodology also suggests an increasingly important point that once again tackles the question of archiving and documentation: to ensure that methodologies can improve, it is necessary to draw profit from past experiences. That asks perhaps for some developments and standards in order to document methodological topics. [17]

In addition, we should note that recourse to archives and to secondary analysis is not only economic and effective, but also allows original approaches (especially in the study of change). It is often difficult for individuals to recall information from the past. A former investigation can provide a very helpful source of reference, which makes it possible to measure the changes since then. [18]

3.4 Is synergy possible?

Quantitative and qualitative archived data are located in systems of forces and constraints between these three fields. But precisely the possibility of synergy can also arise at such an intersection. Here, we would like to stress three of these possible synergies:

- Initially at the intersection of teaching and research, one could mention summer schools and other facilities of training, starting with exemplary data sets.
- If we think of the archives' possible contributions to teaching, the secondary analysis also becomes valuable because it emphasizes the possibilities of repeated analysis. This is important in order to test alternative explanations and to ensure a way to correct errors that could occur in the scientific process.
- Lastly, beyond the secondary analysis, the benefits of which have been explained, it should be mentioned that in the relationship between archiving and research, documentation of the methodology used should allow evaluations (as well as meta-evaluations) and thus, in the long term, improve the quality of the data collected. [19]

These arguments are important to understand the role of archiving in the improvement of resources. But it is also necessary to locate this role in the possible interactions with researchers; in short, to place it in a context of research. [20]

4. Network and Proximity

One can add up a dimension in terms of scales, linking global to local, to the argumentation in terms of fields, which have been developed up until now. From my point of view, the argumentation in terms of data archiving or methodological resources must take these two levels into account. It is worth detailing some of the reasons behind that idea. [21]

4.1 A global level?

The global level results in fact from a movement toward globalization and professionalization of scientific research, which is marked by a series of indices. For instance, research funding tends to prefer the idea of a critical mass for the teams. In Switzerland, priority programmes (SPP) have yielded to national centers of competence in research (NCCR); the European Union's programmes consider structuring "European Research Area." In such a context, publication and validation are also likely to change since a book in a "local" language loses its importance in relation to journal articles in English. [22]

This process has had a very concrete set of consequences. International projects with strong comparative components can develop precisely because they answer the idea of a work integrating a critical mass. Publication in international journals also reinforces comparative work. It is exactly this type of diagnosis which led the priority program "Switzerland: Towards the Future" to organize the Swiss participation into the ISSP and ESS.⁵ [23]

5 ISSP is an international Social Survey Program and ESS stands for European Social Survey. They are two examples of very interesting comparative programs.

Consequently, seeing infrastructures settling in the realms of research will not come as a surprise. The same is true with secondary analysis, the importance of which has grown because it is the only way of gathering data in an efficient way in an international context. But at the same time, that also implies a standardization of access at international levels, i.e. a co-operation between institutions, which provide information. Finally, that induces a professionalization of methodological work standards as well as a rise in general requirements. [24]

In short, in order to ensure the participation of the researchers of a country in this international system, we need to facilitate the access to information and to improve methodological resources and competences. This is, of course, particularly true for quantitative data, but approaches based on qualitative data cannot remain simple spectators of such an evolution, particularly if methodological reflection has to follow the same standards of quality as the other directions of research. [25]

4.2 Why a local level?

The quick description of the evolution which has just been given could lead us to think that the dominant tendency is one of globalization, and thus that the national institutions lose their credentials. On the contrary, such institutions have a major intermediary role to play. The reason is simple: most researchers work in a local context; most of them have direct interactions with the people with whom they are associated, which remains the primordial means of contact even in a world of virtual transactions. This privileged contact in which national networks could play an important role makes it possible to establish an additional channel of communication to reach the international level channel and its specific methodological requirements. [26]

The same type of thinking applies to the archiving for which the deposited data are often obtained only after a relation of trust was established. One might realize that, in general, in this field the set-up of scientific networks and their smooth management implies a form of proximity that only the local level can provide. [27]

5. Conclusion

To sum up, the questions arising from the archiving of qualitative and quantitative data have a similar ground: in both cases, it is necessary to stress the importance of documentation and of diffusion. In both cases there is a need to take into account the conditions of production of the data in order to allow a conscious analysis of it. [28]

It might be surprising to recognize such proximity between methodologies which are often presented as antagonistic. In fact, it shows that in all the cases, the essential element is to think of the adequate methodology adopted and its consequences. In that respect, we can hypothesize about a synergy between the approaches when we see them as complementary. [29]

Placing methodology in the center goes back to stressing the essential role for archives well beyond the mere function of long-term preservation: providing elements for the "good use" of the data. This good use does not only rely on an initial knowledge of methods, but also requires diffusing the experience and exposing the acquired knowledge. It is in this way that the tasks of teaching and the development of exemplary data become part of the functions of archiving, whether they are qualitative or quantitative. [30]

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Citation

Joye, Dominique (2005). Qualitative or Quantitative? Data Archiving in Documentation, Research and Teaching [30 paragraphs]. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 6(2), Art. 39, <http://nbn-resolving.de/urn:nbn:de:0114-fqs0502394>.