

THE USE OF THE QUALITATIVE CONTENT ANALYSIS IN PSYCHOLOGY: A CRITICAL REVIEW

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ABSTRACT. This paper aims to analyze the inferential processes underpinning interpretation in qualitative Content Analysis and that are related with a triad compounded by theory, phenomenon and datum. In the first section, a brief history of this method and of its main modalities and techniques are presented. In the second, the standard procedures of a categorical Content Analysis are discussed, according to Bardin's perspective. Specifically, the paper discusses the codification and categorization processes and their underlying logical mechanisms: induction and deduction. Some questions and epistemological issues are introduced concerning the operationalization of both these mechanisms in Content Analysis and the limits of treating the later merely as an *ad hoc* resource. In the next two sections, the article provides a critical analysis of the qualitative Content Analysis, taking into account the three following interconnected components: phenomenon, theory and data. It is argued this method of analysis must go beyond the mere description or organization of data through categorization, focusing instead in a theorization of the psychological phenomenon under investigation.

Keywords: Content analysis; qualitative research; psychology.

UMA CRÍTICA DA UTILIZAÇÃO DA ANÁLISE DE CONTEÚDO QUALITATIVA EM PSICOLOGIA

O objetivo deste artigo é analisar os processos inferenciais que estão na base da interpretação de dados qualitativos em Análise de Conteúdo, os quais envolvem o trinômio teoria-fenômeno-dado. Na primeira seção é apresentado um breve histórico desse método e de suas principais modalidades ou técnicas, e a segunda são discutidos os procedimentos-padrão de uma Análise de Conteúdo categorial na perspectiva de Bardin. Discutem-se os processos de codificação e categorização e os respectivos mecanismos lógicos subjacentes: indução e dedução. São introduzidos alguns questionamentos e reflexões epistemológicas referentes à operacionalização desses dois mecanismos no contexto da Análise de Conteúdo, alertando para a impossibilidade de tomar essa técnica um recurso *ad hoc*. Nas duas seções seguintes são apresentados subsídios para servir de base a uma crítica da Análise de Conteúdo qualitativa: fenômeno, teoria e dados. Argumenta-se a favor do entendimento desse método como um recurso de análise de dados que deve visar mais à teorização do fenômeno psicológico investigado do que à descrição desses dados ou a sua organização (via categorização).

Palavras-chave: Análise de conteúdo; pesquisa qualitativa; psicologia.

UNA CRÍTICA DE LA UTILIZACIÓN DE LA ANÁLISIS DE CONTENIDO CUALITATIVO EN PSICOLOGÍA

RESUMEN. El objetivo de este artículo es analizar los procesos inferenciales que se encuentran en la base de la interpretación de datos cualitativos en el Análisis de Contenido, y que implican el trinomio teoría-fenómeno-dato. En la primera parte, se presenta un breve histórico de este método y de sus principales modalidades o técnicas. En la segunda, se discuten los procedimientos estandarizados de un Análisis de Contenido categorial desde la perspectiva de Bardin. Se discuten los procesos de codificación y categorización y los respectivos mecanismos lógicos subyacentes: inducción y deducción. Son introducidas algunas cuestiones y reflexiones epistemológicas referidas a la operacionalización de los dos mecanismos en el contexto del Análisis de Contenido, alertando para la imposibilidad de hacer de esta técnica un recurso *ad hoc*. En los dos apartados siguientes se presentan algunos argumentos que pueden

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servir para realizar una crítica al Análisis de Contenido cualitativo: fenómeno, teoría y datos. Se argumenta a favor del entendimiento de este método como un recurso de análisis de datos que debe pretender más la teorización del fenómeno psicológico investigado que la descripción de estos datos o su organización (a través de la categorización).

Palabras-clave: Análisis de contenido; investigación cualitativa; psicología.

Sometimes there is a great diffusion of content analysis (CA) in qualitative research in psychology in Brazil, especially from Lawrence Bardin (Bardin, 1977) (Castro, Ads & Sarriera, 2011). Some authors (e.g. Bauer, 2002) attribute, as the initial milestone of CA, the analysis of the symbols of religious hymns in the seventeenth century, although the most common references are made to Lasswell for his media analysis in the motivations for the two world wars (Rock & Deusdará, 2005).

Certainly, the CA made contributions in helping researchers to treat and simplify the analysis of qualitative information, encouraging the popularization of the qualitative methodology in our country. On the other hand, the CA may also be responsible for certain narrowing in the possibilities of thinking about qualitative research and the metatheoretical and epistemological issues involved in it. This happens because the CA is often taken as a resource *ad hoc* in searches, that is, as a technique in itself, disconnected from a robust theory and from an understanding of the nature of the investigated phenomena (Bendassolli, 2013).

As a consequence, it is clear that the CA, with rare exceptions, has been used in an uncritical way, mainly because it figures only as a reference in the section of method (feature *ad hoc*) without any loyalty to the application of one of his techniques, and this weakens its use. At the same time, researchers who dominate the CA and make use of their technical compliance with the recommended procedures sometimes forget to critically consider relative aspects to the inferential processes that underpin their qualitative and quantitative interpretations, an aspect that will be discussed in more detail in this article. The quantitative approach performs interpretive inferences from the results of frequency obtained after the data categorizing. In turn, the qualitative performs inferences based on the presence or absence of coded and categorized elements.

Considering the above, the aim of this paper is to analyze the inferential processes that underlie the interpretation of qualitative data, which involve theory-phenomenon-datum

trinomial for the production of psychological knowledge. This general objective is complemented with some specific goals. The first one is to analyze the *standard* representation in CA (specifically, in categorical), consisting of two key processes: coding and categorization, which use the logical operations of induction and deduction, including abduction. The second objective is to analyze the importance of specifying the psychological phenomenon as a way to articulate the datum with the theory or the theory as the datum, for the production of knowledge, and thus, to prevent that the researcher treat CA as a research strategy *ad hoc* (Bendassolli, 2013, 2014). Our purpose is to argue in favor for the understanding of CA as a resource for analysis of data, rather than the description of these data or its organization, should aim at theorizing the psychological phenomenon.

The article presents the *rationale* set out below. In the first section we present a brief and summary historical of the CA and its modalities or techniques. In the second one, we outline and we discuss the standard procedures of a categorical CA, according to the style version made famous by Bardin (1977). We discuss the processes of coding and categorization and their underlying logical mechanisms: induction and deduction. In the following two sections we present a set of subsidies for a critique of CA, including the discussion of adductive reasoning and the relation among phenomenon, theory and data.

BRIEF HISTORY AND CA TYPES

From the perspective of Bardin (1977), the development of CA can be organized into three stages. The first (1940) was influenced by the Chicago School thinkers who defined the content analysis as a research technique for the purpose of objective, systematic and quantitative description of the manifest content of communication. It highlights the focus on oral and written production, whose key elements are the sender, the medium, the message and the

receiver. The content analysis would fulfill the role of completing something by coding and categorization, revealing the hidden.

The second phase (1950 to 1960) was characterized by a renewal methodology, covering qualitative and quantitative approach, which have strengthened over the decades. The first is going to focus on the frequency of appearance (Kohlbacher, 2006; Vala, 1987), in contrast with the qualitative CA, whose focus is centered on its presence or absence, in addition to the interpretive inference via context (Hsieh & Shannon, 2005; Mayring, 2000). The third phase (1960 onwards) is marked by the use of computer support, providing faster and more accurately to organizational procedures, coding and categorization of texts to be analyzed (Hogenraad, Péladeau & McKenzie, 2003; Oliveira, 2008).

Some authors (e.g.: Hsieh & Shannon, 2005) attribute the broad applicability and use of AC to the wide range of integrated technical in its scope, including interpretative and intuitive approaches as well as systematic and strict textual analysis. By way of illustration, the classification by Bardin (1977) highlights six techniques in CA:

- Categorization analysis: data reduction technique by means of coding and thematic organization;
- Evaluative of assertion analysis, whose goal is to identify the affective and connotative meaning of words from three bipolar dimensions: good / bad (evaluative), strong / weak (power) and fast / slow (activity);
- Analysis of the utterance, which sees the word as an act, relying on the notion of communication as a dynamic process and not as a datum. The concern is with the general statements and phrases: syntactic analysis and paralinguistic (structure of grammatical forms); logical analysis (arrangement of speech); and analysis of atypical elements (omissions silences, repetitions, etc.);
- Analysis of the expression: formal aspect of speech such as, for example, research of the authenticity of a document (used, for example, in Literature and History), and analysis of political discourse;
- Analysis of relations: search not specifically the frequency, but the relationships that text elements have with each other, among which

stand out the analysis of the co-occurrences (concomitant presence of two or more elements in the same context units) and the structural analysis (to identify the location of the elements in the context); and

- Discourse analysis, whose focus can be: from the surface effects to identify the deep structure (production process), to establish links among the situations in which the subject is (production conditions) and semantic-syntactic manifestations of the discursive surface or the deconstruction of the discourse.

This broad and diverse classification difficult to establish precisely what would actually be the CA, but that there is a process that suggests being common to all the techniques listed above, especially in the CA categorical, which will be our focus in the next section: the inferential process.

CATEGORICAL CA, INDUCTION AND DEDUCTION

As described by Bardin (1977), and with some adjustments, the categorical CA comprises the following main steps:

1. Pre-analysis, which consists of material selection (*corpus*) to be analyzed (articles, transcribed interviews, etc.) and its meticulous reading;
2. Encoding, step of transforming of the raw data from *corpus*, making use of records to be grouped in the future. In this sense, it is necessary to be clear about the recording unit (word, sentence, breaks of the sequence of phrases, silences, theme, etc.) and to the rules for enumeration (presence or absence);
3. Categorization, organization phase and classification of the *corpus* on a set of significant number of units of record (the codes); it is a way of sorting based on criteria, the entire encoded material;
4. Interpretation, which consists of the inferential process.

The above steps allow us to state that a basic principle of the operation of categorical AC is the data reduction through two key processes: encoding and categorizing of the contents of a given *corpus* of interest. Two fundamental mechanisms underlie the process of coding and

categorizing the contents of a *corpus*: on the one hand, a mechanism for induction; the other, a deduction. These two mechanisms may vary and be combined in different ways, and their presence underpins the process of a standard categorical CA. Following, we treat some examples of induction / deduction joint in the data analysis process in CA.

To analyze qualitative data, the researcher can use predefined categories based on the theoretical referential - backed induction by theory of defined based. The own Bardin (1977) suggests this possibility. For example, a common practice is the use of structured or semi-structured script from which the researcher conducts the interview. This same script, by encouraging the participants to talk about certain subjects, provides the researcher priori categories for analyzing its data, especially in the categorization process. If, on the one hand, the pre-categorization facilitates the alignment between the purpose of the research and the interpretation, on the other hand, it can limit the alternative possibilities of *corpus* analysis in the coding phase and thus, it discourages the creativity of the researcher and the exploration of alternative ways of analysis.

The other side of the coding and categorization system is the deduction. In a way, the validity of an induction can be tested by the successful deduction. As the researcher makes use of induction to encode the raw data (first data reduction), to be able to identify an organizational structure of these codes by creating categories that further reduce the significant elements of *corpus*, he will have to resort to deductive elements, notably the conceptual and theoretical resources. At this point, the induction is linked to the deduction. The deduction serves, then, to the purpose of testing the adequacy of induction. As a result, in the case of a prior hypothesis testing, there is the dependence of the interpretation of a theoretical and conceptual system as its basis.

The defenders of a more atheoretical and inductive perspective argues that the categories should emerge from the data (e.g.: Bowen, 2008). That being so, it would be minimized theoretical recursion problems, which constitutes in the data according to the underlying theory of the researcher with the data distortion. If the categories emerging from the data, not from the theory, then one can say that these categories are *grounded* in the data, i.e., they are empirically grounded; merely reveal latent

structures that were already present in these data. Only after identifying these basis categories, the process of theorizing would follow, and then the researcher would have to resort to the deduction.

This "naive" realist perspective has been criticized in the broader context of the philosophy of science for decades (e.g.: Bendassolli, 2013, 2014; Kelle, 2005; Popper, 1959). In the social sciences is a radical posture still advocated in some research traditions, such as researchers who are members of the Grounded Theory Method, particularly the followers of Glaser (1978). Prospects not so radical advocate the relevance of using the theory concurrently with the categorization process (e.g.: Strauss, 1987, Strauss & Corbin, 1998); however, this does not exhaust the question of the relationship between categorization and theory. In the next section we deepen the discussion of inference, including, beyond the induction and the deduction, the adductive reasoning.

THREE WAYS OF INFERENCE

The concept of inference is related to the type of reasoning - for example, deductive or inductive. In the empirical sciences, inference is a fundamental process, as it seeks from the factual knowledge to reach the awareness of the reasons for this fact. There is also a third form of reasoning, in general little used by researchers in CA: the adductive reasoning proposed by Peirce (1878/1970), a process by which new ideas, explanatory hypotheses and scientific theories are engendered beyond the observed contingently. The abduction consists of assertions about unobservable to explain the observable which, without losing the connection to the sensory experience, transcend it in pursuit of rationality.

The Table 1 presents examples that help illustrate better as Peirce (1878/1970) classified the three forms of inference. Interestingly, the deduction starts from the rule to the datum to extract the conclusion (inference), while in the case of the induction, it starts from the datum in order to complete something, and then make the leap to the rule (theory). In the case of the abduction, it starts from a rule, which can be a provisional theory; and venturing a conclusion (hypothesized) and then analyze the datum. For Peirce, what differentiates the abduction of the

induction is precisely the interpretive risk that the former takes when thinking of explanatory

alternatives, rather than just establish a new general rule that represents the particular case.

Table 1 - Deduction, Induction and Abduction

Deduction	Induction	Abduction
Compliance of the datum to the theory (rule)	Compliance of the theory (rule) to the datum	Circularity output and search for other theories
Rule - All the balls in this box are white	Case - These balls are from this box	Rule - All the balls in this box are white
Case - These balls are from this box	Result - These balls are not white	Result - These balls are not white. What could explain this?
Result - These balls are white or more or less white	Rule - Not all the balls from this box are white	Case - These balls are from another box (so where would they be?)

Source. Adapted from Peirce (1970 /1878).

We defend the hypothesis that the analysts of CA using the categorical analysis only as a technique for data reduction (feature *ad hoc*) overlook critical aspects that enable them to take better advantage of interpretive inference (abduction *via*). These analysts do not dare to critically analyze the effect to hypothesize an antecedent event ("cause") that can reorient the relationship between datum and theory, making it more complex from the abstract point of view, with repercussions on attempts of exploiting in the future the design of the phenomenon that binds the datum to a more complex theoretical elaboration. Then came the time to clarify what we mean by the phenomenon and how it can bound the datum to the theory, helping in the inclusion of abduction as a form of reasoning that extends the interpretive possibilities.

PHENOMENON, THEORY AND DATUM

The relationship between datum, phenomena and theory came to occupy a prominent place on the agenda of philosophy of science from the publication of Bogen and Woodward (1988) article. Here, in contrast with the approach of the "observations laden by theory", the authors distinguish the datum phenomenon. Data are observable and collected in certain contexts, therefore they are situational, and as such, they suffer perceptual biases. The phenomenon, however, is an extension of the datum, something that is stable and not always observable. The data would be the means by which one accesses the phenomenon; but for that to happen we need to ensure that data are reliable - and here, Bogen and Woodward

highlight the importance of experimental and statistical methods, which could ensure an inferential leap from data to phenomena.

For Bogen and Woodward (1988), the theory does not play a key role in his passage from datum to phenomenon. According to them, the theories are constructed to explain the data, and not the reverse. However, more recently, Woodward (2011) relativizes this view by stating that the distinction between data and phenomena should not be interpreted as a *top-down* reasoning negative, that is, from the direction of theory > phenomenon > datum, but as a negative that not all the relationships with the datum and the phenomenon is driven by a theory. Remember that the history of science is replete with examples in which the phenomena are detected in process of observation without a prior theory to explain them or to provide them.

This positioning of treating the phenomenon as emerging from the data, neglecting the role of theory is not shared by other authors, translating into focus of controversy in the philosophy of science. For example, Massimi (2007) states that the phenomena are not images or shadows of the real world, but objects of experience to which we have access only through scientific theories. Similarly, for Schindler (2011), the theory is that offers the vocabulary to describe and interpret the data and to identify patterns in these data, which could indicate the presence of the phenomenon (as, indeed, advocate Bogen & Woodward, 1988). In the same direction, Apel (2011) considers that the phenomenon corresponds to a "superstructure" of the general theory used. The author makes a distinction among statements about the phenomenon,

which may be observable (e.g., coffee cups fall from the table to the floor), and statements about the general unobservable theory - for example, the gravitational power causes that the objects on a table fall on the floor when they were overthrown. More recently, Bendassolli (2014) argues that the phenomena, especially in the field of psychology, are not merely "accessed" by the theory and the method, but empirically reconstructed, situation in which theory plays a fundamental role.

On the other hand, a perspective that repositions the relationships among data, theory and phenomenon and that is closer to our understanding - so it is quite helpful for the purposes of this article - is that was brought by Bailer-Jones (2009). The Figure 1, with some adaptations, illustrates the view of this author, who introduces a model notion in the composition of the datum- phenomenon-theory triad, presenting it as a central element for the indirect test of theory and the mediation between and data and theory.

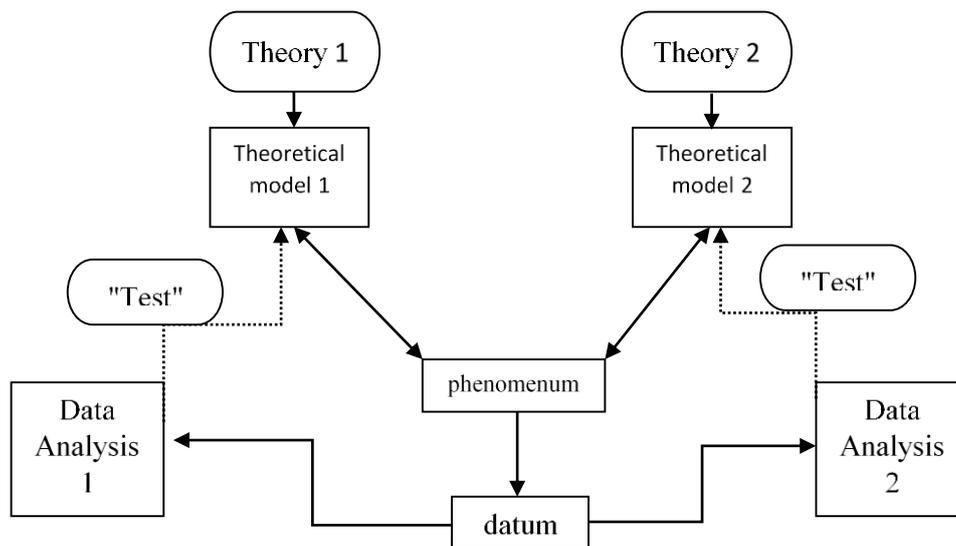


Figure 1 - Relationship Among Datum, Phenomenon, Theoretical Model and Theory in the Empirical Research

Source: Adapted from Bailer-Jones (2009)

Model is an interpretative description of the phenomenon that facilitates the intellectual or perceptual access to it. They are partial and synthetic descriptions as highlight some aspects over others, for simplification of the phenomenon. The models allow the connection between the abstract theory (general) and the nearest concrete phenomenon, because they operate at a lower level of formalization. We take the concept of work, which is abstract.

To make this concept a phenomenon we must describe it more concretely and translate it as a model, presenting the synthetic information of what is essential to it and what distinguish it - e.g., workload, type of link, type of obtained transformation etc. In the statistical procedures, an area in which models have become seemingly more common, the models are relational constructs, proposing hypothetical relations of the data among themselves, which are tested in an empirical reality. The model can also be analogously designed as a "gestalt", which dynamically changes as the links and refers to a

representation which allows the apprehension of the whole from its constituent parts.

As can be seen from the Bailer-Jones (2009) approach, the data are a form of expression of the phenomenon that deal with the theoretical model, being this the route by which the abstract theory (more general) would approach in a more concrete way to be put to the test or else to be discussed in defining the phenomenon; but the data, because they are circumstantial, could be interpreted differently, depending on how the phenomenon position itself in a theoretical model, because the data are facets of the phenomenon, elements from which it is represented theoretically. In this direction, Basu (2003) states that the same data can build distinct evidence for or against various theories. More widely in the philosophy of science, this is known as the problem of underdetermination of theories (Quine 1975).

Thus, if the same set of data can serve as evidence for various theories, it is essential to have in mind the phenomenon to analyze the

data (Bendassolli, 2014). The model defines what kind of simplification will be made of the phenomenon, leaving aside some relevant aspects and emphasizing others, which allows to look at the data in a more targeted way. The phenomenon and the theoretical model remain strongly connected, although the test or the questioning of the phenomenon model occurs at the level of generation and analysis of the data, as figure 1 shows (Bailer-Jones, 2009). It is in this context that the researcher can, in an exploratory way, risk new ways, new rules, new possibilities to explain the phenomenon. Let's look at this more closely in the next section, bringing the discussion to the field of CA.

PHENOMENON, WAYS OF REASONING AND THE CA

When CA is elected as a technique for data analysis, it is important to make clear the significant role it will have in building the relationship among the data, the phenomenon and the theoretical model (see Figure 1). It is important that there is an alignment. Data, alone, are circumstantial, and to interpret them we must guide the analysis by understanding what is the phenomenon investigated. In turn, a first way of representing or operationalizing the phenomenon is to adopt a theoretical model that serves as *proxy* (representative) of the larger, abstract theory. The consideration of this role model seems essential, because in its absence, the researcher is faced with a series of data which, by themselves, are not able to say much about a more stable phenomenon, although this stability, in the case of research in psychology, is provisional.

At this point, we can replace the relationship among induction, deduction and abduction in the categorical CA. The inductive leap, when starts from the "gross" datum to a concept, occurs from a structural alignment among theory, model theory and phenomenon. This alignment is that it allows the researcher to select portions of the empirical material as those containing relevant information about the phenomenon. As such, there would not be a pure induction, in the naive realist sense: not start from the data blindly, as these, strictly speaking, only start to make sense as *corpus* from the moment that defines the logical framework, of deductive nature, formed by the theory, the model and the phenomenon - including subsidizing the design itself of the

research as a whole (Bendassolli, 2013). With the phenomenon on the horizon becomes possible the empirical test, which, in the case of AC, is the deductive process by which categories are confronted with the theory, conducting the empirical adjustment and acting on its explanatory power. As we said at another time, the induction is ratified by deduction; but, where to situate the abduction?

The abduction could be used by the researcher when skipping from the theoretical model 1 to the theoretical model 2 (see Figure 1), in an attempt to find a better alignment for the same data and the same phenomenon. This could be a conciliatory way between, on one hand, the search for empirical adequacy of the theoretical scaling process that may involve the proposal of a new theory, perhaps more suitable to understand the data (induction), and on the other hand, the attempt of "theory test", which consists in an effort to conform the data to the prior theory that provided the *frame* to the theoretical model and the empirical research (deduction).

Additionally, other simplifying elements of the fundamental aspects of the phenomenon are taken into account for the new alignment, being necessary to resort to the theoretical model 2 and to the abstract theory 2. Thus, it is assumed that phenomena have relative stability and, depending on the theoretical model and the abstract theory of which it is a simplification, it can be analyzed from various perspectives; but as much of the researches that use CA, it does not take into account the clear existence of a phenomenon, this point can be difficult to understand. In fact, the exchange of a model by other means involves, to some extent, some theoretical development. If the search is conducted with an CA as a resource *ad hoc*, in the end, there are empirical generalizations of inductive nature that may, in the absence of a seated robust phenomenon in the phenomenon-theory-datum axis, result in spray the findings, expanding the empirical base without a consideration of theoretical development.

There are two possibilities when it carries out an CA: to produce new theories or models, either to confirm or "test", or to consolidate, or to enlarge, etc. previous theories / models. The choice of one or other of these pathways affects the process of operationalization, as in the decision of using categories *a priori* or not; but in both cases, they are at stake conceptions about

the statutes of empirical data in support of a theory and the independence or dependence of the latter in relation to those same empirical data.

In a "naive" approach, the theory appears only *a posteriori*, after the data "speak" to the researcher (Bendassolli, 2014). In this case, the weight assigned to the empirical is crucial, but strictly speaking, the phenomenon is not presented without lens that allows watching it (theoretical model, simplifying of the abstract theory). The datum, to be interpreted, needs a spotlight, which is fostered by the theoretical perspective, which makes it apprehensible by the perception in space and time. In an opposite perspective, the theory appears as a great backdrop, as a horizon which provides for the interpretation of data.

While upholding the view that the phenomenon, through the lens of theory and from the model, ensures the prospect of watching of a portion of the world, the CA should look into the data as associated to an understandable phenomenon by a given theoretical perspective, creating the phenomenon-theory-datum axis, which is the support of the research design. If the path adopted is possible without a prior theory, it is understood that the phenomenon can be grasped from the datum - and only then, the theory that represents it is sought (empirical adequacy); but as we have seen, it seems problematic and questionable the attempt to analyze data without having in mind a phenomenon.

FINAL THOUGHTS

The main argument in this article is that the use of CA by researchers in psychology often ignores its potential for generating alternative explanatory theories, which can avoid both the trap of "corroboration" (deduction) or imposition of the theory to the datum, as the "reification of the datum" (induction) - building a punctual theory that will not go beyond the datum itself.

Our aim was solely to alert researchers about the importance of these aspects when using of the AC, as obviously is made in any analysis of qualitative data. If the concern of psychologists when using the qualitative CA is to understand the phenomenon beyond the control of the data, by the experimental and statistical method (as recommended Bogen & Woodward, 1988), it is important that they have in mind the theoretical

contribution that may come to give to the understanding of this phenomenon. By the way, this is the main contribution of qualitative data analysis: to offer new interpretive possibilities that go beyond the statistical inferences.

From our point of view, this objective can be better served if the researcher has a clear idea that the data are contextual elements that reflect specifically a phenomenon that is related to a simplifying theoretical model of a more abstract and general theory. The phenomenon (more stable) is the starting point for defining what data (contextual) should be collected, and it is also the meeting point of the procedures for analyzing data with the theoretical model. The alignment theory-phenomenon-datum top-down, as indicated by Bailer-Jones (2009), is in the relationship among the analysis procedures and the theoretical model, although this model is provisional, and in the procedures of confrontation ("test"), which may lead to the abandonment of a theoretical model in favor of another, more promising for understanding the phenomenon (by abduction). Thus, we believe that this qualitative CA may in fact contribute to the advancement of knowledge in psychology.

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