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A PROPOSAL FOR A PROSPECTIVE METHOD BASED ON GROUNDED THEORY

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ABSTRACT

This paper presents the steps of building our own methodology guided by the Grounded Theory, a type of interpretative research situated as a variant of symbolic interaction, focused on the knowledge of the perception of the particular meaning that a situation or an object has to one another. The work is of bibliographic nature, giving priority to looking into the works of authors considered reference on the proposed topics, allowing the discussion about the concepts of prospecting in the fashion design area.

The circularity is inherent in the Grounded Theory; thus, the basic axis consists in the role of the researcher, which interacts with the reality of the subjects, and it emerges from the researcher exchange with that data. The work done by qualitative methods have advantages over quantitative methods, once, during the data collection, the researchers can add new information until later, at the stage of analysis.

The proposed methodological framework focuses on the research by studying three categories: a) macro trends, b) behavior, c) reference sectors (industry). The research takes place in four main steps: a) preparation for the research, b) data collection, c) analysis or codification of the data, d) delimitation of theories.

Keywords: Grounded Theory, methods, prospecting.

1 INTRODUCTION

Currently, the situational factors and the technological advances forced the configuration of new methodologies so as to enable medium and long term planning, with the active information in the shaping of the future and the dynamic conditions of the decision-making processes. In the 21st century, studies are proliferating in several countries, under several perspectives, with emphasis on the research of national strategic interests; the generation of technological policies on specific segments; the regional development and development of productive clusters.

Foresight is a tool, which allows for the company, through a collective consideration over future challenges, to structure and evaluate its strategic and marketing options, in order to lighten their actions. Thus, one realizes that the prospective attitude is to control the change, acting on proactivity, preparing for the changes, as well as causing the desired changes in the present scenario.

This work will lead the reader through the stages of construction of the developed methodology, based on Grounded Theory, through the research

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project FPLab – Futuro do Presente, linked to the Research Group Fashion Design and Technology of the University of the State of Santa Catarina, Brazil. The work is of bibliographic nature, prioritizing the reference to the works of authors considered respectful on the proposed topic, allowing the discussion about the concepts on fashion prospecting and presenting the interpretation of Grounded Theory conceived by the research project.

The circularity is inherent in the Ground Theory, thus the basic axis consists in the role of the researcher, who interacts with the reality of the subjects, and it emerges from the researcher exchange with those data. The work done by qualitative methods has advantages over quantitative methods, since while collecting the data; researchers can add new information until later on, at the stage of analysis.

The proposed methodological research project focuses on the research by studying three categories: a) macro trends, b) behavior, c) reference sectors (industry). This way, it does clear up issues of time, communication format results, data collection source, or the use of certain tools. The research takes place in four main steps: a) preparation for the research, b) data collection, c) analysis or codification of data, d) delimitation of theories.

The research planning is accomplished in the first phase of the model, as well as the expected result with the researched information. The interview is the primary data collection instrument; however, other tools, such as informal conversation, focus groups, document review, meetings, specialized evaluation and project management software are not eliminated.

The process of data collection is configured continuously, solving doubts arising from the review process. At this point, you should establish a central category, for the development of mental map, and to identify influences of the three categories based on theoretical comparisons and researcher observation exercise, including filtering and interpreting of information and ideas, which are, sometimes subjective.

The third stage involves the collection processes, data analysis and delineation of trends, which complete the formatting of the theory in terms of a narrative axis, selecting representative topics of the phenomenon in question. The central category promulgates the nature of the social process that clarifies the behavior of those involved, their main concerns and how to solve their problems, allowing you to connect all the information collected and attached to one or two phenomena at most.

The last step of the method is the demarcation of theory and refers to results, i.e. the evaluation of hypotheses, by means of a comparative process of similarities and differences between the concepts. However, in practice, the process is not so linear, for the Grounded Theory enables stops, setbacks and circular advances whenever a new analytical direction appears, in order to get a deeper study.

The text is divided into two sections, besides the introduction and the final considerations. In the first part, the article presents some considerations regarding the methodologies and prospective methods. Then, the text describes the methodological design used by the research project.

2 PROSPECTIVE METHODS

A consideration of different research methods and techniques enables the improvement of the prospecting activity and, consequently, its results as the exploration of the future, as both differ in their approaches and the requirement for certain skills of the researchers.

"It can be classified as 'hard' (quantitative, empirical, numerical) or 'soft' (qualitative, based on judgments or thinking over tacit knowledge). Another possible classification is to assess whether such methods and techniques tend to be 'normative' (starting the process with a clear perception of the future need) or 'exploratory' (starting the process from the extrapolation of current technological capabilities)" (TERRA, 2012, p. 294).

Charmaz (2009, p. 31) asserts that 'the methods expand and broaden our perspective of the life studied and thus extend and deepen what we have learned from it and upon it'. Currently, several methods and techniques used derive from other fields of knowledge.

"Still, the challenges are great for prospecting as a tool. It is necessary to further define its terms, structure its processes, map its progress, check connections as broader political and social processes, and its connection with other competitive intelligence tools.

For a better understanding of the tools available for prospecting, some of these were organized and defined using as criteria the data they analyze, the process of analysis and synthesis of data, and the results they provide. A recent classification of existing methods and techniques, and in use on the prospective activities, is the combination proposed by Porter *et al* (2004) and Skumanich Sibernagel (1997) that divide the prospecting tools in eight families: Creativity; Descriptive Methods and Matrices; Statistical Methods; Trend Analyzes; Experts Opinion; Monitoring and Intelligence Systems; Modeling and Simulation, and Scenarios" (BACK, 2008, p. 11-12).

In prospective research, usually associations of formal/informal strategies, and qualitative and quantitative techniques are used. The research project FPLab - Futuro do Presente, linked to the Research Group Fashion Design and Technology of the University of the State of Santa Catarina/Brazil, has developed its own methodology, guided by sociology and anthropology.

"The approach to the sociology and anthropology is, as explained, the use of a pre-defined and complex methodology, which makes it possible to capture and analyze signs emitted by contemporary society in order to minimize errors and failures in this tomorrow's report" (CAMPOS *et al.*, 2012, p.53).

The methodology is based on the Grounded Theory, a type of interpretative research situated as a variant in symbolic interactionism, focused on the knowledge of the perception of the meaning that a particular situation or object has to one another. Charmaz (2009) ratifies that the work done by qualitative methods has advantages over quantitative methods, once, while collecting the data, researchers can add new information until later on, at the stage of analysis.

"The flexibility of qualitative research allows researchers to follow the directions that arise. The methods of Grounded Theory extend this flexibility and

A proposal for a prospective method based on grounded theory

Sandra Regina Rech

Dulce Maciel

simultaneously provide more focus to the researcher than many other methods, if used. The Grounded Theory accelerates obtaining a clear focus on what occurs in your data without sacrificing the detail of the actions performed. As a camera with many lenses, first you realize a broad range of landscape. Then you change your lenses several times to get these actions even closer" (CHARMAZ, 2009, p. 31).

Researchers in the area are sanctioning that everything is data, that is, everything that is observed in the research environment or about the research topic. The theory arises from data, neatly collected and analyzed through the research process (STRAUSS and CORBIN, 2009). 'However, the data vary in quality, relevance of the emerging interests and usefulness for the interpretation' (CHARMAZ, 2009, p. 33). Expressed through social facts, culture becomes inherent in the sphere of man in society, because the cultural phenomena are dynamic.

"It is for the researcher to understand systemically the actions subject to external observation, which might look the same, but are enriched by the sense. With this, it is imperative that the complex design of sociological studies to realize that human actions need, more than being explained, be understood. Thus, the study of complex modes of interactions seems more plausible for the sociological study" (CAMPOS *et al.*, 2012, p. 54).

Castilho and Vicentini (2008) states that, at present, by the fast-moving information, availability and access to it, the difficulty lies in organizing and synthesizing sources, aiming at to seizure of the phenomena in the way they are, in fact, presented. Thus, the use of a structured method enabling organization, validity and alleged impartiality of the information collected is essential, supplying frivolous and dangerous approaches, as they contain no appropriate tools for the detection of trends in fashion (CALDAS, 2006).

3 METHODOLOGICAL DESIGN FPLAB – FUTURO DO PRESENTE

The methodological model proposed by the research project, focuses on the research by studying three categories: a) influence of macro trends, b) behavior, c) sectors of reference (industry). This way, it does not clear up issues of time, communication format of results, source of data collection, or the use of certain tools. The research takes place in four main steps: a) preparation for the search, b) data collection, c) analysis or codification of these data, d) definition of theories.

The research planning is accomplished in the first phase of the model, as well as the expected result with the researched information. Soneira (2007) points out that the interview is the main data collection instrument of Grounded Theory. However, he does not eliminate other tools such as informal conversation, focus groups, document review, meetings, expert evaluation, techniques and procedures of financial analysis, project management software and best practices of human resources (BACK, 2008).

"The methodology, commonly known as Grounded Theory, was originally developed by two sociologists, Barney Glaser and Anselm Strauss (GLASER, 1978, 1992; GLASER and STRAUSS, 1967; STRAUSS, 1987). Although each came from a different philosophical tradition and research, their respective contributions were equally important "(STRAUSS and CORBIN, 2009, p. 22).

A proposal for a prospective method based on grounded theory

Sandra Regina Rech

Dulce Maciel

The process of data collection is configured without interruption, solving doubts arising from the review process. At this moment, it is necessary to establish a central category for the development of the mind-map, on the basis of the comparisons and theoretical exercise of observation of the researcher. Kelley and Littman (2001, p.53) discuss that 'focused observation can be a powerful source of innovation' (figure 1).



Figure 1 – Adaptation to user - shoes leather with built-in GPS.

Source: <http://dominicwilcox.com/portfolio/gpsshoe/> (Access in 05/24/2014).

Therefore, theoretical sampling is defined during the course of the survey, generating a cumulative process of collection and systematic observation of human behavior and its scenario.

"The scenario is set also as prospect and landscape that we live and that we see; it is the scenario that determines the guidelines for the new realities of our everyday scene (productive and marketing) and defines the roles of people as agents and social actors" (DE MORAES, 2008, p. 155).

By working with systematic observation, it is necessary to focus on all the details so there is no room for error or unfounded assumptions on the part of the researcher.

In a second step, the method proposes to identify influences of the three categories (macro trends, behavior and reference sectors), including filtering and interpretation of information and ideas, sometimes subjective. The object of study of FPLab – Futuro do Presente is the blogosphere, which refers to the collective term comprising blogs and their connections. It is interesting to highlight the idea that the blogosphere works as a social phenomenon, while the pages of blogs are just web pages. Thus, one can see that the internet is not a computer network, but of people.

"The description is also basic to what we call conceptual ordering. This refers to the organization of data into discreet categories (and sometimes, classification) according to their properties and dimensions and then using the description to clarify these categories" (STRAUSS and CORBIN, 2009, p. 32).

The third step involves the collection processes, data analysis and delineation of trends, that end in delimiting the theory in terms of a narrative axis, selecting representative topics of the phenomenon in question (RAYMOND, 2005). Data analysis is considered the most complex process of prospecting trends, for it often covers arguments and extremely subjective aspects. The central category proclaims 'the essence of the social process that explains the behavior of the

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people involved, their main concerns and how they solve their problems' and it enables the connection of all of the information gathered and inherent in the one or the two phenomena, at most (GODOI *et al.*, 2006, p. 253). First, a narrative line is generated or made explicit and can become the central category of the theory. This step implies the ability to cut and choose categories and issues that are relevant to the composition of the representative theoretical model of the phenomenon approached.

According to Strauss and Corbin (1990, p. 57), the encoding process 'is the core process of the theories that are constructed from the data', that is, from the conceptualization and reconnection of data in innovative ways, validated by relevance of the research (PUCHASKI, 2008). The analytical process aims at: a) building the theory; b) providing the necessary methodological accuracy to the scientific process; c) helping researchers to detect biases; d) developing the foundation, the density, the sensitivity and the necessary integration to generate a theory. 'Getting the data, the researcher examines them line by line and sets the units of analysis. Thus, each unit of analysis is named with a word or sentence expressing the meaning of this to the investigator' (CASSIANI *et al.*, 1996, p. 80).

Soneira (2007) discusses that the coding involves a break in the data, extracting the original text or context (descontextualization), allowing the identification and grouping information. However, later the composition of a new context will be possible (recontextualization) and the beginning of questions, discovering their properties and dimensions. However, it is important to prevent some errors during the encoding process, such as insufficiently explain the relationship between the codes or omit the negative facts so that a new execution of the categorization of data is regarded as unnecessary. Raymond (2005, p.5) reports that the negative data are an opportunity to re-evaluate the expressions of the phenomenon studied and so, designate new categories and relationships from this analysis.

"The encoding is the fundamental link between data collection and the development of an emerging theory to explain these data. By encoding, you define what happens in the data and begins to struggle with what it means" (CHARMAZ, 2009, p. 70).

The non dissociability between the collecting and analysis phases of data also manifests itself in the encoding activities, which is the central part of the data analysis. The encoding is the result of questioning and giving temporary answers on categories and their relations, which must be confirmed and improved over the three phases of the encoding process: a) open coding; b) axial coding; c) selective coding (STRAUSS and CORBIN, 2009).

Starting the research, codification is open and thorough, involving the breakage, the analysis, the comparison, the conceptualization and categorization of detailed data, called microanalysis data (GODOI *et al.*, 2006). This process contains inductive characteristics of conceptual guidelines of formulated hypotheses; and deductive, used primarily for initial derivation of codes (or concepts). Soneira (2007) foresees that, first the data are compared among themselves and the categories emerge as a common denominator for a group of data that contains the same ideas.

The purpose of the open coding is to generate and validate properties and categories through the various comparisons (GODOI *et al.*, 2006). Open coding

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focuses on disruptions in diagnostics, testing, in comparison, concepts and categorizations of data. Moreover, according to GODOI *et al* (2006), it is during the early stages of open coding that the researcher analyzes the data without a clear direction, but analyzes them intensely, and in detail, everything that may deserve consideration, through observation and intensive data analysis; whether in texts, interviews, pictures, advertisements, etc.

The open coding requires a brainstorm during the analysis phase, as researchers should decompose the full potential of the data (CORBIN and STRAUSS, 2008). In open coding, the data are broken down into concepts and categories and in axial coding the data are recomposed in different ways, linking category and subcategories. The conceptual frameworks that identify the problem in the social scene, are expanded on the basis of the information collected from the social body of the study and its perception on the situation investigated (CASSIANI *et al.*, 1996). From this moment on, that is, the moment the checking of the data occurs in order to grasp its essence, there is also a reduction in the amount of data and the formation of new words (CORBIN and STRAUSS, 2008). Kelley and Littman (2001) describe the encoding process as an enrichment and questioning phase that characterizes the theme and its relations with the phenomenon analyzed. The work of conceptualizing concepts and categories is a process of adaptation of elaborated concepts about the chance events and not a specified exposure of these. The concept of data not only reduces the number of data the researcher will work with, but also provides a language (new words) so that an articulation about these data occurs.

"The coding in Grounded Theory requires a stop so we can conceptualize analytically the data we collect. Such questioning not only benefits our understanding of the studied life, but also contributes to the orientation of the subsequent data collected concerning the analytical issues that we define" (CHARMAZ, 2009, p. 67).

The concepts and categories represent the phenomenon, because it is the unit that gives its meaning (RAYMOND, 2005). Subsequently, the grouping of concepts around a central category occurs, composed of themes or similar universes, because it is necessary to find out which concept belongs to which circumstance, setting its structural limit.

From this moment, two types of categories and properties may arise. The first type refers to the categories constructed by the researcher and the second type of category refers to concepts that were removed from the very language of researched situation. Thus, in the encoding process, the concepts may emerge from readings and theoretical training of the researcher or arise from expressions and concepts used by the actors of the studied phenomenon.

During the development of the theory, one can see that the concepts derived from substantive situations tend to be accurate names for the formatting process and peculiar behavior of the examined phenomenon, while the concepts devised by researchers, through analysis, function as explanations for the acts and behaviors analyzed. The central issue in the development of concepts of process is not exactly to characterize a datum, but to constitute its structural limits, to unravel the appropriate concept for the circumstance. Then, the concepts concerning a similar theme or universe will be incorporated around a conceptual category.

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Soneira (2007) states that the main characteristic of open coding is the systematic search for properties, synthesized in a logical diagram that allows the researcher: a) the identification of a category that is central to a phenomenon, which are the core ideas, events, episodes or facts related to a set of actions or interactions (Strauss and Corbin, 2008); b) the exploration of causal conditions, which are the elements/situations that allow the emergence of the phenomenon (Strauss and Corbin, 2008); c) the specification of strategies; d) the identification of the context, considered as a peculiar cluster of attributes that belong to the phenomenon, qualities in which action strategies/interaction are taken (Cassiani *et al*, 1996) and the intervention conditions, composed by time, space, culture, economic and technological situation, history, personal biography (Strauss, Corbin, 2008); e) and the delineation of the consequences or expectations of the group of actions and interactions (CASSIANI *et al*, 1996).

“They are created to help analysts to take the necessary steps for the construction of the theory – conceptualize, define categories and develop categories in terms of ownership and dimensions - and then relate categories through hypotheses or statements relationships. Conceptualization is the process of grouping similar items according to some defined properties and gives items a name that represents common association” (STRAUSS and CORBIN, 2009, p. 121).

After open coding, we move on to the axial coding, which analyzes the relations between the categories that constitute the hypotheses of substantive theory. The main feature of axial coding is the active search and systematic properties (SONEIRA, 2007). At this stage, the researcher classifies information in different ways after open coding. The axial coding process discusses phenomena and unraveled concepts during the first step, i.e., the open coding. Now, the concepts and categories recreate each other, consisting of an inductive procedure of cooperation between them. The influx of categories is made from analysis of categories, and the integrations and connections become evident, formatting broader sets.

“The axial coding lists the categories to subcategories, specifies the properties and dimensions of a category, and reassembles the data you fragmented during the initial coding to give coherence to the emerging analysis” (CHARMAZ, 2009, p. 91).

The method of relating concepts and categories recreates patterns similar to a hologram, in which the parts and the whole build up one another. At certain points they connect, disconnect in others, surrounded by a number of uncertainties exercising a cosmological thought, emphasizing cooperation and complicity between the concepts and categories derived from data. At this point, there is the arising of the categories gathered from general information.

The third moment of the encoding includes the integration of categories developed in abstract level, from an initial theoretical framework, aiming at identifying the central category(-ies) of the theory (GODOI *et al*, 2006). Therefore, the ‘selective coding is the process of integrating and refining categories’, but in more abstract level than the axial coding (CHARMAZ, 2009, p. 143). Cassiani *et al* (1996) state that, at this stage some steps must be followed, not so linearly as: a) the relationship of secondary categories around the central category through the logical diagram; b) the validation of these relations with the models; c) the complementation and refinement of categories with additional data.

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Sandra Regina Rech

Dulce Maciel

"In all the literature of Grounded Theory, researchers are advised to avoid forcing their data in codes and preconceived categories, and, among these are, firstly, the existing theories. We must also avoid the forcing of our preconception in data that we code. [...] The researchers who use the Grounded Theory, as well as other researchers, can unconsciously start from their own preconceptions about what a particular experience means and entails" (CHARMAZ, 2009, p. 99).

The last step of the method is the delimitation of the theory and it refers to results, i.e. the evaluation of hypotheses, by means of a comparative process of similarities and divergences between the concepts. Initially, it is planned to summarize the information collected, taking into account the objectives outlined in the first phase (research planning).

Strauss and Corbin (2009) present a list of criteria to be applied to the classification of a central explanatory concept as to the studied phenomenon: a) it has to be central, that is, all the other main categories should be related to it; b) it must appear with frequency in the data, allowing in all, or almost all the cases to have indicators pointing to such concept; c) the resulting explanation of categories should be logical and consistent, and the data cannot be forced; d) the name used to describe the central category must be sufficiently abstract so that it can be used for research in other substantive spheres, leading to the definition of a more general theory; e) analytically speaking, the moment there is a concept refinement, through its integration with other concepts, the theory gains depth and explanatory power; f) the concept is the fundamental point of the data and it can explain the variations, that is, when the conditions change, the explanation remains, even if the mode of expression of a phenomenon is slightly differentiated.

In Grounded Theory, the result can be considered as substantive or formal. The first refers to a composed theory of same groups or cases, for example, empirical theories, sociological research on inter-ethnic relations, professional education, delinquency or research organizations. As for the formal theory, it is composed of groups or comparable cases only at a conceptual level, stigma, diverted conduct, formal organizations, socialization, congruence of status, power and authority, reward systems, or social mobility. Developing the theory, it is understood that the concepts resulting from substantive situations approach more specific names to exhibit peculiar behavior of the phenomenon investigated.

"In the specific case of 'FPLab - Futuro do Presente' research project, the delimited theories (or trends) commonly refers to the substantive level theories expanded to the formal level, since the trends observed have their possibilities of generalization expanded, thus expanding the scope of the delimited and communicated prospective" (CAMPOS, 2010, p. 69).

11TH EUROPEAN ACADEMY OF
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PALAVRAS CHAVE: EU ROBÔ - INTERAÇÃO ROBÓTICA - DESEJOS MUTÁVEIS - PENSO, LOGO EXISTO - ENCAPSULAMENTO CIBERNÉTICO - AGRUPAMENTOS DIGITAIS - PERSONALIDADES ENGAJADAS - MOVIMENTAÇÃO IRRACIONAL - COLETIVO CONSCIENTE - IDENTIDADES IMPERMANENTES

Figure 2 - Trends 2013

Source: <http://www.futurodo presente.ceart.udesc.br/tendencias.html> (Access in 05/24/2014).

The focus, throughout the research, should be in harmony and in the logic of the facts observed and analyzed in comparison to reality. The delimitation of the theory reflects the observed and the observer, therefore, the theory does not arise purely from data, yet the researcher's exchange with this information (CHARMAZ, 2009; GODOI *et al*, 2006). Therefore, the complexity of Grounded Theory is, above all, into the circular way of conducting research steps. There may be theoretical saturation from circularity between data coding steps. 'The theoretical saturation of categories occurs when: no relevant or new data emerge; the development of the category is dense and the relations between the categories are well established and validated' (CASSIANI *et al.*, 1996, p. 83). Godoi *et al.* (2006) confirm that normally it is the researcher that saturates the work, given the pressures of limitations of time and resources. However, the researchers' experience can reduce failures and errors and it leads, guiding the result toward maturity in scientific research sphere. In the last step of the methodological design, we move on to the composition of the result, where trends collected become information communicated through texts, mood boards/panels (figure 2) and digital reference books.

4 FINAL CONSIDERATIONS

To ensure the competitiveness of companies and countries, prospective studies are carried out, increasingly, using explicit and tacit knowledge, aiming at building future scenarios through the understanding of variables and conditioning factors involved. It is crucial to note that any method, technique or tool will be able to lead alone adequate answers to all the complex requirements involved in the architecture of the future. Nevertheless, it is necessary to know the prospective tools and involve all stakeholders from the beginning of the process, endorsing credibility to the final results.

Therefore, the purpose of this article was to present the methodological research model using the project FPLab – Futuro do Presente/ University of the State of Santa Catarina/Brazil, coupled with the complex systemic relationship in the world, seeking to clarify the data decoding process and thus allowing prospecting opportunities and its impacts on the fashion supply chain. Thus, it is perceived that the competitive dynamics of today requires knowledge, skills and

A proposal for a prospective method based on grounded theory

Sandra Regina Rech

Dulce Maciel

ability to manage environmental, financial, technological, social, productive and operational resources.

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