Ethnography research for Design

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Abstract

The following paper presents a research aimed at applying ethnographic observation to support co-design processes and evaluating how such data collected by experts can be efficiently communicated to designers. To this purpose we have developed our own set of tools and experimented them in 4 workshops in the framework of a project called Babylandia

Keywords

Ethnography, concept development, disabled people, participatory workshop, visual notebook

Ethnography has been of utility to design since the 'turn to the social' and the 'interpretive' approaches of the social sciences occurred as noticed by Hughes, J.A., King, V., Rodden, T., and Andersen, H., (1994). The appeal of ethnography to design follows the acknowledgement by designers that the development of interactive technologies increasingly relies upon an appreciation of the social circumstances in which systems are deployed and used. In this sense ethnography informs design by revealing a deep understanding of people and how they make sense of their world.

Context

An updated definition

Ethnography is a methodology based on direct observation and gives priority to observation as its primary source of information (Gobo, 2008)[1]. This purpose is also served, in secondary and ancillary manner, by other sources of information used by the ethnographer in the field: informal conversations of the actors 'on stage', documents materials produced by the organization under study (diaries, letters, reports, house organs, photographs, and audiovisual aids), individual or group interviews. However, the overriding concern is always to observe actions as they are

[1] The new demand for ethnography and the increase of professions based on observation are visible in the marketing with the commercial ethnography *(mystery shopper and sibling techniques),* fashion industry (*the cool-hunter),* the management studies, ITC, ergonomics and action-research, industrial design (*shadowing, flanking, focused ethnography, rapid ethnography, contextual inquiry),* the journalism *(investigative and gossip journalism),* the natural science (*birdwatching),* the surveillance in the leisure *(lifeguard),* the police investigation and the politics of security, the politics of destabilization (crime and terrorism), the art (photography, films and documentaries), the revenue investigation, the paediatrics and so on.

performed in concrete settings. Heritage (1984) stresses, if one is interested in action, the statements made by social actors during interviews cannot be treated "as an appropriate substitute for the observation of actual behaviour". In fact, there is an oft-documented gap between attitudes and behaviors (La Piere, 1934), between what people say and what they do (Gilbert & Mulkay, 1983). What most distinguishes ethnography from other methodologies is the role of 'protagonist' assigned to the cognitive modes of observing, watching, seeing, and looking at, gazing at and scrutinizing.

A historical sketch

The birth of ethnographic methodology is commonly dated to the period between the late nineteenth and early twentieth centuries. It developed internally to ethnology, a discipline which in the first half of the 1800s split away from traditional anthropology. Before the advent of ethnographic methodology, ethnologists did not collect information by means of direct observation; instead, they examined statistics, the archives of government offices and missions, documentation centres, accounts of journeys, archaeological finds, native manufactures or objects furnished by collectors of exotic art, or they conversed with travellers, missionaries and explorers. These anthropologists considered the members of native peoples to be 'primitives': they were savages to be educated, and they could not be used as direct informants because they could not be trusted to furnish objective information.

The English anthropologist of Polish origin Bronislaw K. Malinowski (1884-1942), is commonly regarded as being the first to systematize ethnographic methodology. In his famous Introduction to Argonauts of the Western Pacific – the book which sets out his research conducted in the Trobriand Islands of the Melanesian archipelago off eastern New Guinea – Malinowski described the methodological principles underpinning the main goal of ethnography, which is to grasp the native's point of view, his relation to life, to realize his vision of his world. Malinowski inaugurated a view 'from within' that American anthropologists of the 1950s would call the 'emic' perspective – as opposed to the 'etic' or comparative perspective, which instead sought to establish categories, useful for the analyst but not necessarily important for the members of the culture studied.
From the 1920s onwards, ethnographic methodology was incorporated into sociology. Later on this approach has been adopted by psychologists, economists and scholars of organizations and most recently also by designers. Today there is an increasing demand in various sectors of society – from marketing to security, television to the fashion industry[2] – for observation and ethnography.

Ethnography has been of utility to design since the 'turn to the social' (Hughes, King, Rodden, &Andersen, 1994) and the 'interpretive' approaches of the social sciences (Knudsen, et al., 1993) occurred in the early 90s. The appeal of ethnography to design follows the recognition by designers that the development of interactive technologies increasingly relies upon an appreciation of the social circumstances in which systems are deployed and used (Goguen, 1993). In this sense ethnography informs design by revealing a deep understanding of people and how they make sense of their world.

The added value of ethnography

The presence of the researchers in the field enables them to gain better understanding of the conceptual categories of social actors, their points of view (emic), the meanings of their actions and behavior, and social processes. This is the main added value of this methodology on respect of the others methodologies: observing actions and behaviours instead of opinions and attitudes only. The consequences are not only theoretical (finding new or different results) but also practical, because a closer view of the routines and practices of social actors facilitate the crafting of remedial and solutions of social problems. In other words it is easier to outline proposals after having directly observed participants' actual behaviors.

In relation to design issues and according to Salvador, Bell and Anderson (1999) ethnography is a way of understanding the particulars of daily life in such a way as to increase the success

probability of a new product or service or, more appropriately, to reduce the probability of failure specifically due to a lack of understanding of the basic behaviours and frameworks of consumers.

This is one of the reasons why we are assisting to a shift in market research (from in-depth interview and focus group to ethnography) and which accounts for the new demand for observation in social science (mainly sociology and psychology) and for applied ethnography in various professional sectors of society.

Research question

Our research question is based on an already proven hypothesis: the positive influence of ethnographic analysis in concept design experimented in a previous educational experience developed in collaboration with Middle East Technical University in Ankara, Turkey: the NEOdesign Workshop (Costa, Romero, Arslan, & Ilgaz, 2009). This workshop aimed at evaluating how usability and ethnography, as two different ergonomics approaches; add different value to concept development. As a conclusion, we have seen that the students who had done ethnographic researches brought ideas related to innovative design proposals and the students who had studied usability issues found detailed –oriented solutions. Thus we argued that ethnographic research helping to get social, cultural and ethnical information results in more innovative solutions.

The present question is to go beyond the rapid ethnography (Norman, 1998) approach applied in the NEOdesign workshop in order to collect data in a more systematic way and to evaluate how to communicate such data collected by experts to the designer. To this purpose we have developed an own set of tools and experimented it in 4 workshops in the framework of a project called Babylandia.

This tools aim at classify observed behaviours and their interpretation and synthesize them in a visual and conceptual way and is used to stimulate collective creativity during design concept generation workshops (Leonard Burton, Swap, 1999).

Method

Babylandia is a public cofunded project for the promotion of excellence in industrial districts of Lombardy region. The project is done in collaboration with some companies expert in their fields such as; Fumagalli, Parà, Soliani, Caremi, Happychild and Politecnico di Milano. Prof. Gobo from Università degli studi di Milano together with Happy Child defined the typology of structures to be observed for the ethnographic research and designed a grid of observations to be applied in schools, and private homes.

The collection of data includes three phases: preliminary focus groups, free observation and structured observations. The observations are carried out in children' own daily environment during their normal practice. The research has produced many interesting results which are described in detail in text document. In this document the data are organized in 3 tables: observations (and eventual photos), comments (theoretical and reflections) and proposals (theories and techniques) are classified in the columns and there is a row for each item (i.e. walls, floors, windows, wardrobe…). The tables are divided into three thematic categories: day care centres, nurseries, families and organizations for disabled children.

Table 1: Sample row from the ethnographic research

Items	**Observations (and eventual photos)**	**Comments (theoretical reflections)**	**Proposals (theories and techniques)**
Windows	Secondary function: Window handles Are used for hanging cloche, bags. Secondary Function: Windowsill is used as keeping books or objects 	Problem: Not possible to open the window	Rethink of the door handle design for this function (by reinforcing) Construct windows that are not possible to open from windowsill: construct a window with a 30-40cm fixed (with a height of book) and on top is moveable.

The result of the ethnographic research is thus very precise and detailed but too large to be communicated to designers. Although there are already several existing tools - such as scenarios and Personas - available to summarize analysis users' data, we decided to develop an own because of the high quantity of different variables we had to manage such as many users, many tasks and many products in different environments.

Personas (Cooper, 1999) are fictitious characters created to represent the different user types which are useful as a design tool in considering the goals, behaviours, desires of a group of real users. In our case we had a lot of different user categories including children and it would not be efficient to develop a persona for each of them. According to Pruitt and Adlin (2006) the use of personas offers several benefits in product development. They are synthesized from data collected from interviews in order to help to guide decisions about a product, such as features, interactions, and visual design. Such inference may assist with brainstorming, use case specification, and features definition. However in our study we had a lot of non explicit information collected through observations to communicate.

Scenarios are stories about people and their activities (Carroll, 1999). Scenario-based design focuses on the description of the users and how the users perform the tasks (Carroll, 2002) in order to extract users' demands; and provides a tool to design products with high usability. This design approach helps developing ideas that involve interactions with multiple users over a period of time and is very useful when a service with a defined goal has to be achieved. In our case we had an undefined number of tasks that could not be organized in specific services.

Therefore, for the visualization of collected data because of the complexity of Babylandia project we have used a new method called "Visual notebooks" composed of keywords, pictures and citations from the ethnographic research which are purposely designed for the actors involved in workshop sessions organized adapting O'Brian's (1981) methodology as developed by Wilsons (1991). Each "visual notebook" has a key concept such as personal, world, versatility, micro cosmos and aims at supporting product oriented concept generation.

This method is based on visual tools since fast visualization stimulates new ideas by communicating them in a faster and easier way to make them understandable and keep the motivation in brainstorming session. The creative visualization method defines interactive and

graphical presentation of data (Ronald, 1990) in order to visualize specific behaviours or events occurring user's life (Ware, 2004).

The front page of each Visual notebook presents an evocative image and Keywords defined from the analysis of the comments in the second column of the tables summarizing the ethnographic research. In the following pages they are confirmed by pictures taken during the observations (second column of the same table) and from some product trends and children sketches that sustain these keywords. The Notebook is thought to leave a space for the user to write the ideas and do sketches during the concept generation session next to the referred page with the image.

Fig. 1: front page and three sample pages of a Notebook

Those "Visual notebooks" were used in the 4 different workshops that have been developed starting from the characteristics of manufacturing firms. Purpose of the workshops was to create synergy between the companies bringing them to share the different experiences on a 'shared project idea together with the generation of product concepts. So 4 themes have been defined and, according to the themes the companies were grouped.

The workshops focuses were:

- a product for children's protection from electromagnetic radiations and rumors;
- an adjustable seat for disabled children;
- a cabinet for children rooms;
- an interactive floor with LED light.

Fig 2: a workshop participant showing led light applications to the group

For each workshop, two "Visual notebooks" starting from two reference Keywords have been developed corresponding 2 groups of people; composing more than 12 people in brainstorming phase. All the workshops were shaped alternating parallel teamwork, presentation sessions and collective discussions.

Sample Workshop: a chair for disabled children

The reason why have chosen to present this workshop is because the company has an experience in contact with the final user, although not in a structured way. The actual system works as the Fumagalli's account manager meets with the user or, more frequently, the caregiver. The account manager which is often an orthopaedic technician presents the client's ideas and desires regarding the product development to the Project Manager of the company. Analyzing the reported ideas from the users, the Project Manager writes a brief to the product designer. These kinds of interviews are not structured; therefore the brief with indications could be very different from the real situation. Moreover the described process based on interviews has a probability to elicit explicit user needs but can very difficultly discover tacit needs where direct observation and real user involvement would be necessary (Martin and Schmidt, 2001).

So we chose Fumagalli's experience to show the difference between original products and new approach based on a structured Ethnographic Observation.

The Workshop's theme was to design an adjustable seat for disabled children. The company Fumagalli, Italian market leader of the sessions and aids for people with disabilities, hosted the other company partners: Parà; producer of textiles; Happy Child, educational facilities' manager for children; Center Cot, institute of textile products testing.

The workshop lasted one day and was held in two sessions, one in the morning where the researchers presented their methods and tools and the company its goals and proposals, the second in the afternoon with brainstorming and definition of new product concepts.

Fig 3: four moments in the sample workshop

Specific results of the ethnographic research

Ethnographic research carried out at the care facilities and households of people with disabilities had highlighted particular comments from users regarding the need to characterize the environments and products for disabled children in order to make their image more like that of normal products. Further the observations elicited that *"…Children feel the need to express their world…"*

The basic needs of children using these objects are related to their health but families and caregivers also need an emotional and psychological support to deal with the everyday.

"…make their world more welcoming and friendly", "…Children do therapy with specially designed chairs where they can play and do other activities…"

The results of the observations showed us that children can be helpful to use products that increase their level of independence in performing activities of daily life. Some considerations coincide with those that emerged in the feedbacks for disabled children, for example, children use the rooms of the house in order to fill their needs, where their mothers would make personal all the items to take care or to increase the autonomy such as mobility aids.

"Visual Notebooks" were structured on the basis of observations for the Fumagalli workshop. The structure of the workshop has been developed by researchers at the Politecnico di Milano, who have selected a set of keywords related to the results of ethnographic research together with the context related images taken from the material collected during the observations.

The reference Keywords were: *Microcosmo* and *Personale*

Fig 4: sample pages from the Visual notebooks developed for the workshop

Workshop flow

The workshop begins with the presentation of the company's goals and proposal. Then the participants are divided into 2 groups where they have the possibility to work parallel in order to discuss the ideas and product concepts regarding to the keywords and images that are presented in the "Visual notebooks".

After the one hour of brainstorming the 2 groups have presented the results of the creative discussion session influenced by the Visual Notebook.

The Visual Notebook Microcosmo for example reflects the dimension of a disable child which is constituted by using the objects around where his/her interaction is limited to the surrounded space. Wheelchair is the place where this situation is materialized to a dimension where also refers to a "Microcosmo" shared with its caregivers. Thus the inspiration from its the images allows emerging new concept ideas for the product development of a wheel chair through the inclusion of a range of accessories used actively or passively by the child. There are some examples about the introduction of electronic accessories in the head support able to spread music controlled by the same child or parent. Another example has been to furnish the chair as if to use as a "logbook" through which to register news and events concerning the child that to be able to share over a network or send some product usability feedbacks to the company concerning the product.

As for the Visual Notebook Personale, reflections on the size Individual / Social led to say that the object may provide the ability for social integration of children when they are in the community: the chair as a social object.

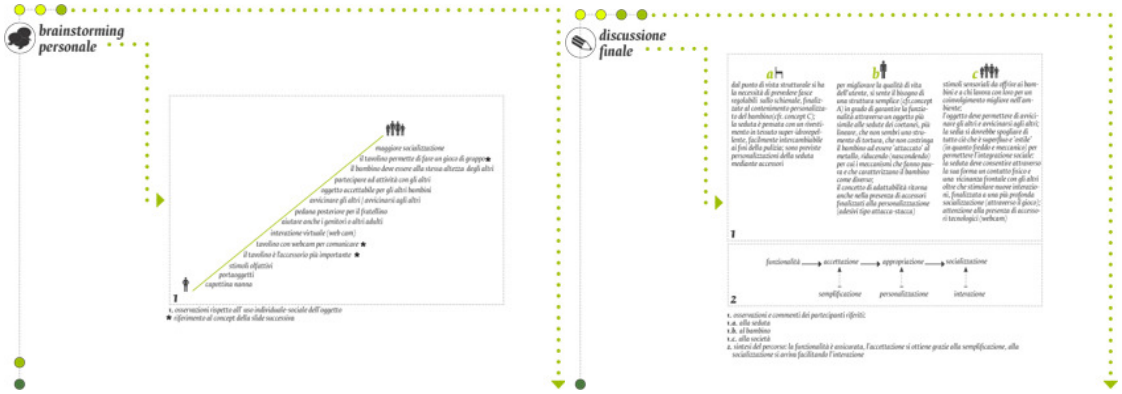

Fig 5: Brainstorming and final discussion synthesis

Compared to the expectations of the company, the working group has considered the genre of products: a specific chair is a female or male object? Most products have been highlighted many times as “masculine" traits in the production company especially because of the technical component and a few references to a universe of forms and signs most sensitive and usually linked to the feminine universe

The final results of the workshop were obtained from a general discussion which helped to integrate the comments obtained from the two groups: Personnel and Microcosm, and to formulate some concepts concerning the possible evolution of the product that has been initially presented by the company. The main results are related to designing new chair concepts:

- Functional and versatile adapts easily to the physical needs of the disabled child;
- Friendly, or that the object should not be a symbol of "diversity" and that through the design of stuffed components it gives welcoming and fun shapes;
- The most important result from the business point of view is the sharing of common goals for developing corporate partners’ concept; which are industry experts, designers and researchers in the project Babylandia

Results

The data collected after the workshop were processed by researchers and submitted to the companies with a report concluding the work in which were defined some project concepts that will allow the company to begin the design phase of a new product to be placed on the market after the closure of the research project; November 2010.

The result of the experience shows us that, at the moment, producers are focused on simplifying production problems (principally the anthropometric variation of the users). Normally, an orthopedic chair for kids requires flexible regulation. Kids grow so fast and therefore changing the chair frequently could be expensive. In this situation, producers, try to offer chairs with flexible adaptation mechanisms in order to be adaptable in time. On the other hand, observations demonstrated that the user desires a simple chair without mechanisms. Even some kids are scared by the chair. Thus, the final concept tries to match necessities, a very flexible frame with a very friendly, easy to change and customizable systems.

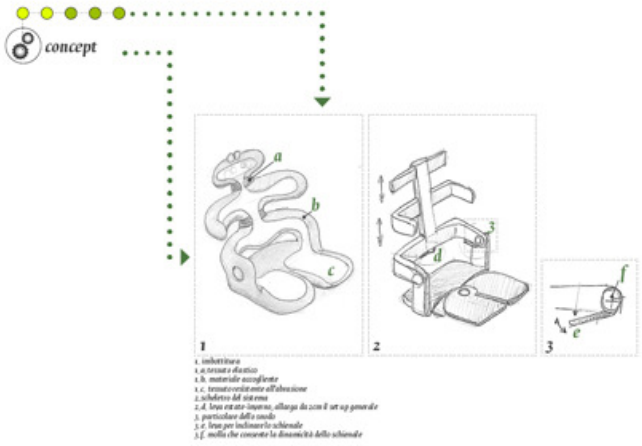

Fig 6: Final Concept

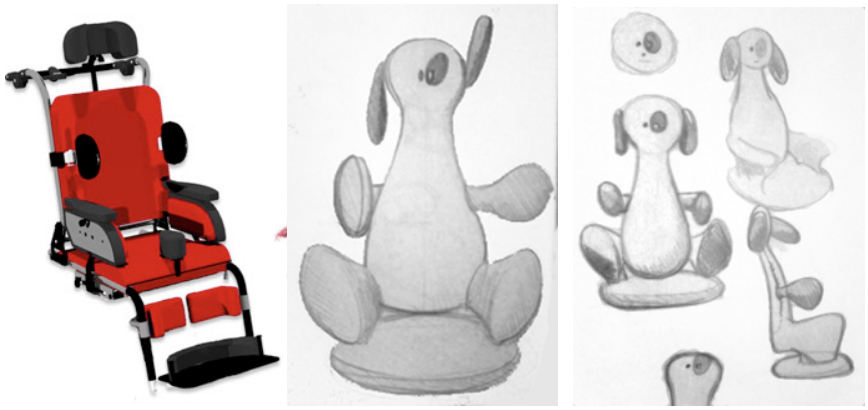

Fig 7: comparision between actual market product and development of the concept

Findings and conclusions

We can conclude that our method is fairly efficient for empowering discussion during the workshop, putting participant in a high level of problem's knowledge. Our tool gives both general information (choosing accurately Keywords) as specific information (reporting user behaviours). However we found some lacks in the synthesis phase, the method must be improved to manage the result of the discussions, since several inputs has been lost

Further on it could be useful to integrate other user research methods since as Denzin noted, any single method ever adequately solves the problem of rival causal factors and each method reveals different aspects of empirical reality (Denzin, 1978). Thus, it is important to approach the phenomenon under inquiry from diverse angles and to integrate diverse explanation resulting from diverse methods. The direct involvement of users in the workshop could be experimented to elicit also tacit needs (Martin and Schmidt, 2001)

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