

# DESIGNING CULTURAL PROBES TO STUDY "INVISIBLE" COMMUNITIES IN BRAZIL

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The objectives of this paper are to describe how and for what reasons probes can be applied for working with marginalised communities and to discuss the complexities involved in create probes for people with poor skills in reading and writing. People in these communities have a low level of education and a high level of health problems, live below the poverty line in slums, and are considered “invisible” by other, professedly “developed” communities. The applied Probe Packages were developed on the basis of information received from health area specialists and ethnographic data. We conclude that, despite the time consumed, the reflection needed, the negotiations, and the complexity of the situation, the final result was really provocative and enjoyable..

## INTRODUCTION

Brazil is a country of contrasts with a huge cultural diversity. With an estimated 181.4 million people in 2005 (Economist Intelligence Unit, 2006), Brazil can be seen as a developing country, while, at the same time, it has elements that could project it into the first world. The country’s community is proud to be recognized as successful football players, as nice

people, and as Latin America’s economic leader, based on its vast natural resources and its large labour pool. At the same time, about one in three Brazilians lives below the international poverty line and cannot afford to buy food. With regard to health matters, the National STD and AIDS Programme (2006) estimates that Brazil had approximately 600,000 persons living with HIV/AIDS in 2004, and is a high-burden tuberculosis country.

The objectives of this paper are to describe how and for what reasons probes were applied for working with marginalised communities and to discuss the complexities involved in create probes for people with poor skills in reading and writing

This paper is going to report first experiences from an on-going probes study that is being conducted in invisible communities in Brazil. Its primary aim is to produce inspirational material for developing information systems to improve health among several invisible populations.

The many labels for these communities include “minority groups” and “marginalized communities”.

They are seen as people who do not have skills, abilities, needs, or expectations and who, because of this, are poor. Facing this stereotyped and, as a consequence, distorted vision, they become “invisible” for most of our “developed” communities, who prefer to ignore them or treat them as people who need charity.

Moreover, these invisible communities have little access to new information technology, such as mobile phones, computers, and the internet.

Faced with this situation, we must ask how it might be possible to create Information Systems suitable for this

context, what kinds of Information Systems are going to be useful for them, and what kinds of Information Systems are going to be enjoyable for them?

At this point, as designers, we have a challenge: As Sanders (1999), has recognized, developing effective information systems' usability is not enough. The systems have to be useful and desirable, too. Based on it, this research phase focuses on a deeper understanding of desirable (emotional) experiences in Human-product (service) interaction in a health context.

After we (the authors) received the demand, to developing information systems for a health context to improve the communities' life, one of the first methodological approaches we used was ethnographic. The ethnographic data gave us a diagnostic of the situation. As Battarbee says (2005), "the ethnographic approach leans on a more rigid theoretical and methodological background than the interpretation based empathy and inspiration approaches".

Therefore, after we treated the ethnographic data, it was clear that we really needed a new insight. This necessity was underlined in the health agents' talk: "we want you to understand that we really want to change our situation, but we want these changes in our perspectives, not in yours." For that reason, it is clear that we have to have a deeper understanding of what the communities' members expected from our work and what kind of health situation they dream about.

#### WHY PROBES:

The Cultural Probes approach was introduced for the first time in The Presence Project (1999) – new media for older people. The project focused on novel understandings of technology's uses, and the focus group was ageing people. As Gaver et al. (1999) stressed, in order to reach new interaction techniques, the team has to be speculative in its design. And, as they were working with older people, they had to get away from stereotypical views, such as that older people are feeble and needy.

They needed to find new opportunities for design. As we are working with communities that accustomed to be seen from a very stereotypical view, the probe's approach seems to be very useful for reaching a new understanding about the communities' contexts.

According to Mattelmäki (2005), probes aim to invite and/or provoke users to reflect on and verbalize their experiences, feelings and attitudes, and to visualize their actions and contexts. In our "experience for health", especially in poor communities, it is necessary that we use something enjoyable to invite them to dream and to share their feelings and dreams with us.

Mattelmäki (2005) maintains that we can identify four reasons for applying probes: Inspiration, Information, Participation, and Dialogue. These are powerful reasons for applying probes in our communities. We need inspiration to provide new insights, and information to know more about needs and experiences in an emotional and provocative way. We need participation to understand real needs, especially in our communities that want to integrate the design process, and we need dialogue to create a direct and real interaction between our communities and us, to avoid misunderstandings in our communication.

#### DESIGN APPROACH

After we (the authors) had decided to apply the probes, other questions arose. What happens to the method when we try to use it in "invisible," disadvantaged communities, as in Rio de Janeiro's favelas?

How should we administer the probes? What kind of items can best be used in the packages meant for the slums of this huge city? And what kinds of cultural issues have to be kept in mind when designing the probes?

#### THE CONTEXT

One of our studied communities has fifty-five thousand inhabitants with a very low socioeconomic status, a high level of tuberculosis, inadequate housing and other problems, such as addiction to alcohol and drugs.

Another important studied community is composed of around two thousand five hundred prostitutes. In this community with a high level of sexually transmitted diseases (STDs), only eight hundred are receiving some treatment at an Ambulatory care centre, the only medical centre to assist this population.

According to health specialists who work with these communities, "tropical diseases, hunger and, consequently, malnutrition are consequences of unemployment" (labour restriction).

The specialists consider that this situation is due to a low education level that results in a "non-work culture". One community member defined their situation as "no money to survive on".

#### PROBES IN INVISIBLE COMMUNITIES

The probe packages were developed on the basis of information received from health area specialists and the ethnographic data. The specialists have long worked with these communities, so they could stress the most important data gathering from the ethnographic approach and show the most serious problems to be studied in the early phase of the project.

They suggested some issues for a holistic approach: in their opinion, we have to have a deeper understanding of users' attitudes and beliefs, (individual and collective experiences in their communities), hopes and dreams,

social support, nutritional balance, health support access, environmental and behaviour situations. They underlined some key words for helping us to understand what kinds of opportunities exist for our design project: unemployment reduction, prevention, education, information, access, reintegration, health improvement / health promotion.

Given these issues and key words, we understood that we had to create a special package to consider the whole situation, and we had to consider users interaction with devices. The demand we received was to develop Information Systems for a health context, and we knew that in these communities, they are people with little access to devices such as mobile phones, computers, and the internet. So we needed to know, among other things, whether they wanted to have access to these devices, why they wanted such access, whether they imagined these devices could change their lives, and how they imagined having access to these devices.

#### ADMINISTERING PROBES IN DISADVANTAGED COMMUNITIES

The packages were distributed to:

Nine specialists from the health area, all of them working for and with the communities;

Six health agents, chosen from among a total of seventeen official health agents. These six agents were chosen according to their work experience with the community, their skills in communicating with the communities and their knowledge about the socio-cultural and economical aspects of the community. These health agents are people from the community trained to advise on questions related to the health area. They live in the community, so the community's members can reach those agents 24 hours a day, seven days a week; and

Six prostitutes, three prostitutes were selected by the Specialists and three prostitutes' representatives from the prostitutes Union chosen by the community's members, in their opinion these prostitutes are most representative of their situation, They have a different vision about their reality; they know more about politics, business, and so forth.

#### TECHNICAL ASPECTS:

The first major problem we faced was how to administer the probes packages. In studies in Europe (Gaver et al., 1999; Wensveen, 1999; Mattelmäki, 2005), administering the package has been mainly a recruitment problem. In most cases, researchers have either recruited people using standard social science methods (like recruiting agencies) or simply have recruited participants from company networks. In our case, this was not possible, since we did not have

networks among our invisible populations. Instead, we had to rely on health care projects and workers familiar with these populations. We had to underline that it was simple to find volunteers to work with us. However, at the beginning they offered a little resistance. In their minds, they have to trust the researchers to be able to cooperate. They said that they are accustomed to this kind of behaviour, because most people say that they will help the community, though the majority of these persons never come back to help or to say why they do not have a solution for the community.

Once that we wanted to test, and see the implications of probes packages, based in European models, in developing countries context, we decide to inspire our package in Gaver et al., (1999), Mattelmäki (2005) and Wensveen (1999, 2005). In particular, the method relies heavily on diaries and postcards that require reading and writing skills and familiarity with these cultural forms. These skills cannot be taken for granted in a study of invisible populations in slum districts in Brazil. We resolved these issues partly by administering the packages through health care workers and partly by relying on cultural forms familiar to semi-illiterate people. Also, we deliberately tried to design the packages so that they would create a personal connection between people and us.

#### PERSONALIZING THE PROBES - CONCEPTUALIZATION.

The probes package as such was designed using items familiar from the first probes studies in Europe. There were some booklets containing different tasks for reaching the issues, post cards, two pens (one red and one blue), and disposable cameras (only in some packages).

To have some fun, we developed a comic character to be used as a "Probe Boy", the project mascot. As Gaver et al. (1999) recognize, we had to develop our probe to make it very pleasant, attractive and enjoyable, but not childish or condescending, and we really considered it during the probes' design process.

The objectives of the package were to identify and provoke emotional responses about, for example, how the users live and take care of themselves, and what their life style and access to healthcare is. We categorized the issues and decided to make some booklets for each task so that it would be easy for the users to make the tasks, to handle and transport them, and to keep them safe. As Gaver et al. (1999) and Mattelmäki (2005) suggest, one of the probe principles is to permit unexpected views and interpretations, offering projective and visual assignments and open-ended questions.

As we are geographically distant from users, we made a booklet to introduce ourselves, explaining who we are

(they already knew, but they had not seen us face to face); we also wrote very briefly about Finland and explained the objectives of the probe packages. We made clear that there was no obligatory task, and we wanted them to have fun doing the probe! In this booklet, we provided a self-explicative illustration to explain how they can group the material together and send the probe back to us (Figure 1).



Figure 1 - Researchers' presentation and instructions to users.

### THE TASKS:

**Diary** – In the diary we focused on the user's day-by-day experiences. Each diary had tasks to be fulfilled over a period of seven days (Figure 2). Each day had almost the same framework and layout; just one space had different questions related to devices. Some of the constant questions are: “At what time did you get into bed yesterday? At what time did you wake up today? What did you have for lunch? Tell us a funny thing about your day!” Some other questions related to users' hygiene, health habits, and emotional responses, were asked using visual elements. As the users have low skills in writing and reading, we used the “probes boy” performing some action and making emotional facial expressions (Figure 3).

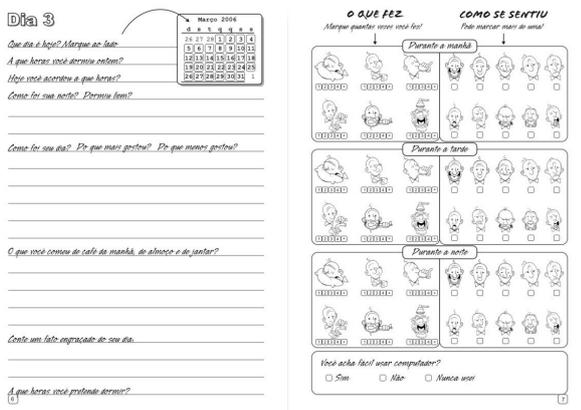


Figure 2 - Diary booklet, image of internal pages, including some questions to be quickly answered.

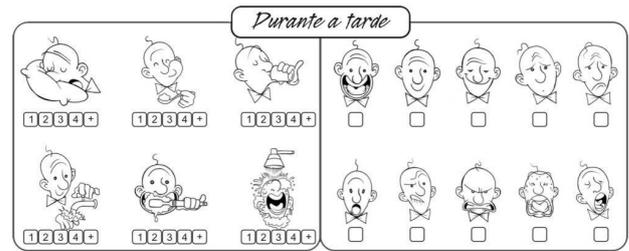


Figure 3 - Mascot performing some specific actions, used to collect some important information, for example, quantity of water consumed during a day, and which facial expression could better illustrate the user's emotion.

**Show your product's face** – For this task, we got our inspiration from Wensveen's (2005) probe task “Emotional Advertising”. We focused on user interaction, technology access and technology knowledge. We intended to understand the relationship between users and products.

For this purpose, we defined five categories: diaries, telephones, computers, televisions, and professions. Like Wensveen (2005), we chose to insert a different category to provoke the users.

The professions category (figure 4) was added to compare the professions to the devices. In Brazil, some professions started to be unreliable because people started to think that they have to pay to access these professionals' services.

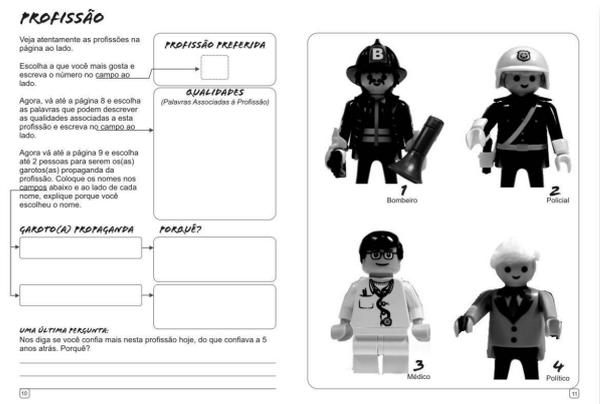


Figure 4 - The professions category, in “Show your product's face” booklet.

**Take a picture** – the focus was to have a holistic vision of users' lives. We suggested sixteen photos and left eleven photos unassigned, simply asking users to show us important things in their lives. The requests for pictures were, for example: “Take a picture that illustrates your life style”; “Take a picture of a pleasant place”; “Open your refrigerator and take a picture of its contents”; “Take a picture of your lunch”; and “Take a picture of the artefact you could not live without”.

**Post cards** – We designed seven post-cards, to be filled out as the users wished. It was suggested that they fill out one card per day. The post cards were about food/nutrition, safe sex, health access, community

support, social relation, the right to choose a job, hopes and dreams, and celebrations.

Each post card had an image on the front and some open-ended-questions on the back, and the layout was like a real post card, including the space for a stamp (Figure 5). The images were different from community to community, because of cultural and contextual differences.



Figure 5 - Some post card examples.

We decided to use images from soap-operas which are already inserted in the day by day experiences of our users, like pictures presented in soap operas. The soap opera is a very popular media for promoting discussion of important issues in Brazilian culture. An issue that would normally be taboo can be presented on soap operas and thus become a public subject. Melo (2002) describes the social legitimization of soap operas, and how nowadays it can intervene in the citizens' lives, create new habits, change the audience's routine, and improve social relationships. The probe package sometimes use some suggestive but ambiguous images, like the projective tests used by psychoanalysts. These images could reveal "fragments" from participants that inform and inspire designs (Gaver, 2001).

Once upon a time - we focused this booklet task on users' perception of the tuberculosis disease: for instance, on the significance of tuberculosis; and the consequences of tuberculosis in the patients' life, and so forth. For this purpose we decided to use narratives to evoke pre-existing experiences and provide afford an opportunity for the user's narrative. The user's task is to complete a narrative that we started. We suggested the use of collages and drawings to complete the story.

#### INTERESTING FEEDBACK RECEIVED FROM USERS AND SPECIALISTS ABOUT THE PROBE PACKAGE:

In this section, we intend to highlight some quotations that show how the contributions of the cultural probes approach leads to a deeper understanding about these kinds of communities – their dreams, their

expectations, and so forth.

About the disposable camera: Most of the specialists said that they originally thought the cameras would not return to us, because they believed that the users would sell or trade them, or that the cameras would be stolen. They also said that users were so enthusiastic about using a camera for the first time that they asked whether they could take pictures of whatever they wanted to, and, at the same time, they were afraid that they would not know how to use the camera. One quotation that illustrates this situation is the following: "Madam, I can take a bus with it, and leave the bus without it!" (user to specialist on receiving the probe).

The health care informants said that, most likely, the cameras would be sold to raise money. –And we were inclined to agree. We thought, "Giving a seven-Euro camera to a prostitute or a drug addict living in the slums is another issue. We needed to find other methods to make sure that the packages would be delivered and raised back." However, when we received the probes back, we were pleasantly surprised: we received all the cameras back! Moreover, the photos were significant.

About the probes boy and the diary: The person in Brazil who sent the probes packages to the users said the mascot could work as a "friend". In her opinion, some users could transform the mascot into a person who helped them to understand the task. At the same time, as some probe tasks ask for personal information, the mascot was "a person" who was there to listen to their history.

It was true, one of the prostitutes wrote in the diary: "it was really good to do the task, because I could feel that someone wanted to listen to me and I did not have to implore someone to listen me!". Another prostitute could share a bad moment in her life with the mascot: "I was in my boyfriend's house and some persons stayed looking to me and talking about me all the time, I felt terrible!" These two quotations are important for us; we could understand a little bit the prostitutes' situation in their community (out off the red light district).

"This is a very cool methodology; I think it is a good way to collect real data from this kind of population."

This psychologist quotation can highlight the effectiveness of the probes. As she had to help some prostitutes to fill some probes tasks, she said that she could perceive the prostitutes really wrote significant issues about their lives.

In the psychologist opinion (and we could probe latter) as the prostitutes had to write and did not have contact face-to-face they really wrote stories that they use not to talk about even in an appointment.

Some users' quotation about the probes packages: "The

booklets are so beautiful that my son want to have one of it for him!"; "Wow! It is so beautiful! I want to collaborate, but it is a lot of tasks and I have a lot of things to do... can I take more than one week filling it?"; "These booklets are the most beautiful booklets that I had in my entire life! It will be so good to use it!".

It was funny to see that most of the probes we received we found these kind of opinion (about probes visual identity). It was important for them to receive a personalised probe package.

"It's good to know they care about us. When they invited us to be volunteers, I had no idea about 'probes'! The doctors explained but I could not understand! Nevertheless, when I saw the packages I could understand and I felt important! They did it for us!" (health agents to informants). "It's good to know that they respect and understand my necessities: when I asked to have more than one week to do the tasks they agreed!" (health agents to the informants). It was nice to see that they started to trust in our research. The most important point is that they did the tasks carefully and they really tried to show us important points in their lives. It was funny to see that it was happen because they could understand that we really care about them.

#### WHAT WE LEARNED FROM PROBES - CONCLUSION

The probes, as Gaver et al., (1999) designed them, are an approach to discover new pleasures, new cultural forms of sociability, and so forth, from the users. We have to stress that it was delightful for us, as designers to develop the probes. Even with the timing consumed, the reflections needed, the negotiations, the complexity of the situation, at the end the result was really provocative and enjoyable.

The probes method may prove to be a particularly important way to study invisible populations. It is personal, enjoyable, fun, and can be designed to be as easy to understand as possible. Probes packages are cheap to produce. If we think about the amount of money that we usually receive to this kind of research in Brazil, the Probes are not so cheap. A complete package, including camera, costs around 22 euros. However, if we consider a small sample needed for it, and the effective result that we are planning to receive (or the feedback that we already received), the cost is really cheap. This is our and health area specialist's thoughts. For designers, the Probes provide essential information about the visual and tactile worlds of people designers are interested in.

However, culturally speaking, these assumptions may prove to be problematic. In a country like Brazil, it

would be easy to use the probes among middle-class city populations, but in the poor, invisible communities in the favelas, vilas and assentamentos of cities like Rio de Janeiro, Brasilia, and São Paulo, the probes have to be administered and designed with local conditions in mind. Still, these are huge populations with important problems that could be alleviated by suitable design solutions. As few designers come from the ranks of the underprivileged, it is all the more important to develop standard methods in user-centred design to produce useful and critical information and understanding from these invisible communities. Without such understanding, our design solutions may prove to be unfounded.

Despite the first chock, it was good to see some health specialists' believing in new methods to collect emotions from their patients. Even thinking that could be a very unusual way to collect data, the specialists were confident to try probe packages.

When we sent the packages to Brazil some experts responsible for applying the probes had no idea how much time we spent preparing, and what kind of considerations we had to develop all the assignments. At the end, when they received and analyzed the probes they said that the package shows the effort we did to develop it.

We could see individual and collective differences in how users and specialists reacted to the probes. For example, it was funny to see people complain about the time consuming, the effort needed to complete the tasks, and the most interest point was that they complained before doing the tasks! Face these reactions we suggested people to not do the task and we remembered that the tasks were not compulsory, and they were volunteers. Therefore, we could give the packages to another person. Moreover, face the situation all the users said: "no, I want to get part in this study".

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