

Research Methods for Designing Effective Experiences

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Because Experience Design encompasses so much new territory for designers (such as social issues, business strategy, the senses, emotions, and the creation of value), designers need to learn new ways of understanding their audiences in order to better prepare for their needs. Some would argue that it's a designer's responsibility to understand user needs such as fulfillment of desire, pleasure and enhanced capability, as well as business needs such as viability, sustainability and (usually) profitability. Unfortunately, designers are seldom taught tools for these explorations. This chapter discusses some of the emerging issues for designing experience and explains practical methods designers can use to expand their research repertoire in order to rise to these new challenges.

The techniques outlined in this chapter are neither foolproof nor applicable in every circumstance. They are merely tools to add to the toolbox of design research and user-centered design. Mostly, they apply to the conceptual stages of the design process and not the evaluation stages (such as user testing). By no means are these complete, exhaustive or universal. However, they are unique and imaginative and can be quite useful when employed in appropriate ways and at appropriate times in the development process.

Why New Methods are Needed

"In the field of Human-Computer Interaction, the measure of a tool or application's success is most often based on whether its intended users can perform their task objectives easily and efficiently. Traditional user-centered design approaches and techniques work in service to these objectives, but in a cultural product whose task is to address issues of self-definition or expression, this may be the wrong mind-set' [Miller].

Interfaces are becoming increasingly social as they as they mediate more social activities (such as conversations) in more sophisticated ways. This makes them cultural products. We already attribute social behaviors to our interfaces, and this trend is growing. Design research must help us understand our audiences and their interfaces on a social level if we aim to make them happy or successful. It is not enough for interfaces or designs to be merely usable. They also must be desirable, useful, needed, understandable and appropriate. They also need to be human, which implies vast diversity. If we are merely designing for ourselves and

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TAXONOMY =
THE PRACTICE OF
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our own needs, then we should just dispense with the pretense, money, and time involved in so-called "user-centric" models.

Method One: Taxonomies

One way to approach the discovery of both uses and experiences is to analyze situations and opportunities systematically. By deconstructing a situation into component parts and analyzing its aspects either one-by-one or in combination, it is possible to flesh out a much more complete understanding of experiences and your opportunities to design them. Often, it isn't even terribly important to do a thorough job. Merely enlarging the design terrain a bit can lead to new insights and innovative approaches.

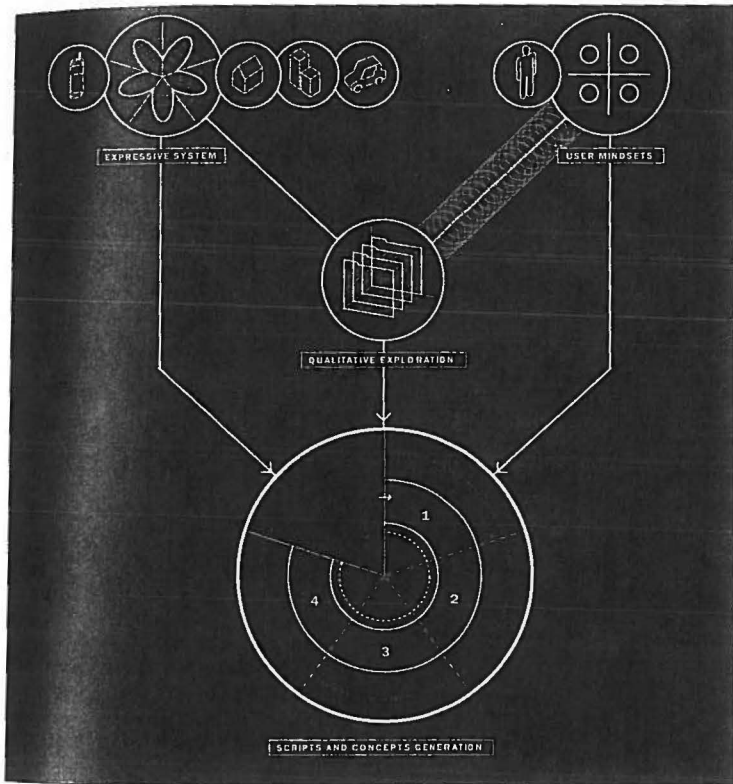
In my classes at Stanford several years ago, I used several methods to derive taxonomies of experiences. One exercise was to investigate life 100 years ago and looking for meaningful activities and values (since looking 100 years into the future isn't possible). This gave us insight into universal human values and goals. All of these were added to the taxonomy. Another technique was to deconstruct strong memories, termed "takeaways" by writer Douglas Coupland in his book, *Generation X* [1992], for components that made them memorable and important. This, too, gave us more attributes to integrate into the taxonomy. Still another approach was to deconstruct media in order to derive an understanding of what made interactive media unique [Shedroff 1]. These generated a few more attributes. What we ended up with was a taxonomy of experiences that is still growing [Shedroff 2].

This taxonomy has become a tool for developing new experiences. It is part of the process I use to conceive of new opportunities to make successful and innovative experiences. Although it is by nature incomplete and will always evolve, the strongest attributes within it are the ones that address persistent human values and emotions. It has also served as the basis of an interactivity chart that I've used for over a decade to help differentiate appropriate uses of interactive media in different situations. These 6 attributes are merely a synthesis of the most important attributes in the Experience Taxonomy (the ones that seem to be the most influential).

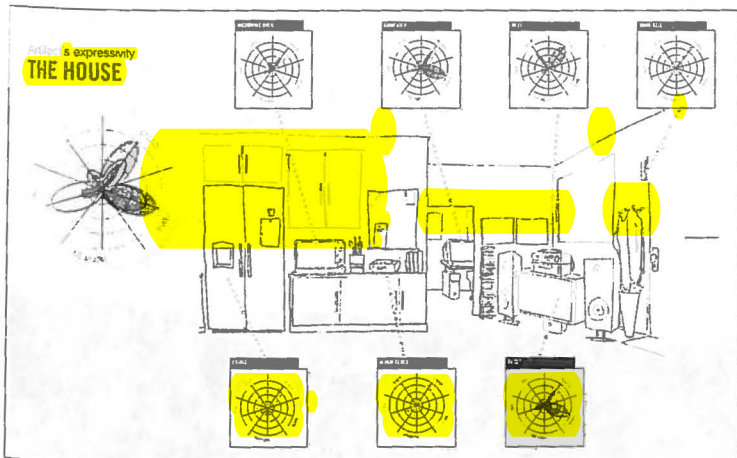
Taxonomies can be built for any situation. They're not particularly time-consuming, but they must address attributes of a problem from many dimensions—especially those representing human, social attributes rather than merely technological ones.

MOBILE EMBODIMENTS

One project that made extensive use of taxonomies when generating new solutions in mobile contexts was completed in the Fall of 2000 at the Interaction Design Institute Ivrea. This exploration by Giulio Ceppi, Analia Cervini, Just Kayser and Mack Thomas identified axes and attributes of technologies, needs-



A process diagram from the Mobile Embodiments team.



Another example diagram from the Mobile Embodiments team.

and contexts for mobile communications. While it was a formal, well-documented system, it was also exploratory and allowed for a great deal of interesting investigation [Ceppi et al.].

The *Mobile Embodiments* team explored questions such as: How can we enhance the qualities of expression in an object that by definition should be small, light and portable? What sensorial means does the designer have to express the richness of these potential new services? What new types of service could these new devices offer?

To facilitate their explorations, the team used axes such as 3G technologies, environmental context (body, home, and work), activities, emotions and different modes of meaning (heraldic, juxtaposed, dense, synthetic and ethereal). They devised a chart to plot these findings in each context in order to visually compare the differences. The chart also provided an impressive array of presentation types to describe, in detail, their analyses. They built scenarios that addressed interactions and experiences along a range of solutions. Thus the scenarios could address a range of behaviors and emotions that truly reflected a wide spectrum, not only with the variation of people, but within the behavior of a single person at different times.

Each proposed design solution is expressed in not only descriptive but also emotional terms. Although the design evaluations

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appear quite technical and substantial (the charts alone suggest scientific data more than design sketches), the data communicated is actually more experiential and human than merely technological. This is an important innovation that allows designers to communicate to clients (and others) the importance of experiential, social and other human values in ways that can be evaluated and addressed by engineers and businesspeople who might otherwise tend to ignore such ethereal concerns. It gives designers a way to not only evaluate their concepts but a way to communicate them to others in quantitative ways.

Method Two: Dreams

Another approach to understanding users and other audiences on emotional and social levels is to use dreams as a way of allowing them to indirectly disclose issues important to them. The indirection is critical because, when dealing with social and personal issues, too much attention paid to the process (or direct inquiries) often leads to phony results. The classic story of research subjects describing their behavior in ideal terms rather than actual ones in questionnaires regarding issues such as television viewing is a case in point. Research subjects often give researchers exactly "what they're asking for" if they sense judgmental reactions from the researchers or overlay their own judgments and aspirations onto their own responses.

Instead, asking them indirect questions that focus on issues or situations that are tangential to those being surveyed often exposes useful information that isn't contaminated by second-guessing. Using subjects' dreams is one way of doing this. Instead of asking a person what their hopes or goals are, or what issues are most important to them, asking them to share their dreams, in detail, often exposes these desires, needs and aspirations.

WEARABLE DREAMS

This is exactly how Stijn Ossevoort approached the beginning of his project, *Wearable Dreams*, when researching wearable design solutions at Interaction Design Institute Ivrea [Ossevoort]. His intention was to identify existing relationships between people and their favorite clothes. He began by building questionnaires that asked his subjects to share personal stories about themselves in indirect ways. He built a process for administering these questionnaires as well as evaluating them to pull out meaningful details that he could use in his design process.

Stijn's questionnaires start with a simple inventory of clothing and its uses. He asks about favorite pieces and how people feel about them. This set the context for some less direct inquiries, specifically: "If your favorite wearable object was a person, how would you describe his/her personality (name, gender, shy, angry, existing person, fantasy figure, place of birth, profession etc.)?" This is clearly an attempt to get people thinking in non-traditional ways about their clothes—specifically, in emotional and social ways. Conceiving of an object as

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interface as a person is actually more helpful than it may seem at first. Stanford Professors Cliff Nass and Byron Reeves have already shown clearly how we layer human values and personality traits onto inanimate objects—especially, but not limited to, computers and interactive devices. In their book, *The Media Equation: How People Treat Computers, Television, and New Media like Real People and Places* [1996], they describe their research in detail and explain why we react to non-human experiences in distinctly human ways, including having expectations of human-like responses from devices and experiences and interpreting machine behavior from human social perspectives.

Naming interfaces, devices and experiences—or characterizing them as people—is a method for embodying emotional and social reactions in a way we can interpret and understand quickly and easily. It is a shorthand that designers can use to understand people's relationships to things so that we can design suitable experiences that have the effects we intend. **You could easily start naming the software applications you use on your computer, for example, and the names you choose would tell a great deal about how you feel about the experiences they offer you.** In user testing, this technique might **help designers understand the less tangible aspects of the things they create; specifically, the social, human values and meanings conveyed through the things and experiences we design,** as well as their understandability and their usability.

Stijn's questionnaire, then, continues into the realm of dreams:
The person that resembles your favorite object gets lost in a difficult situation. Luckily this person has an amazing quality/power that saves him/her.

First make a list of situations that you wouldn't want to get lost in yourself. Pick one of these situations in which your person is to be the main character. How does the environment look, are there more people or certain objects around?

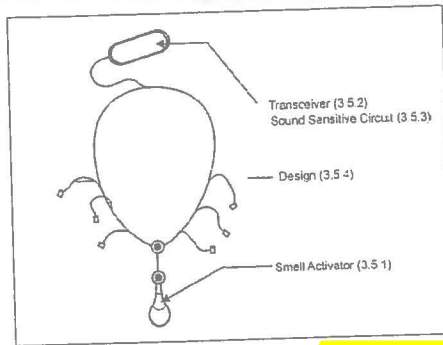
Write a short story/part of a story in which **your person uses his/her qualities to get around the difficult situation. Don't be too critical about what is and isn't possible and use drawings wherever needed. Don't worry too much about the precise length, quality, depth, etc. of the fantasy as I will use them as the starting point for my own work.**

The final two projects that Stijn created came from the many experiences his test subjects shared via their questionnaires. His product designs **(the devices and his users' interaction with them) were directly inspired by the feelings conveyed**

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Compass Coat



Thoughts of Love

Have people
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through the questionnaires. The first is *Compass Coat*, a jacket with embedded EL wire (around the entire coat) that shines as a compass to indicate which direction is North. The second is *Thoughts of Love*, interactive jewelry pieces that use smell to signal their remote activation (and reminds the wearer that their loved one is thinking of them). For sure, the questionnaires didn't short-circuit the design process, reducing the designer to merely implement others' ideas. Instead, they served as a source of inspiration and insight into the emotional and social lives enabled by the things people wear.

Stijn's dream questionnaires reflect a recognition of the need to address desire and meaning in the design process as real parameters. His philosophy is that objects need to fill our emotional needs as well as our physical or rational ones. Stories are one of the best ways to express this level of meaning and stories are a common and comfortable way for people to share such information. This is what makes this technique so simple and powerful.

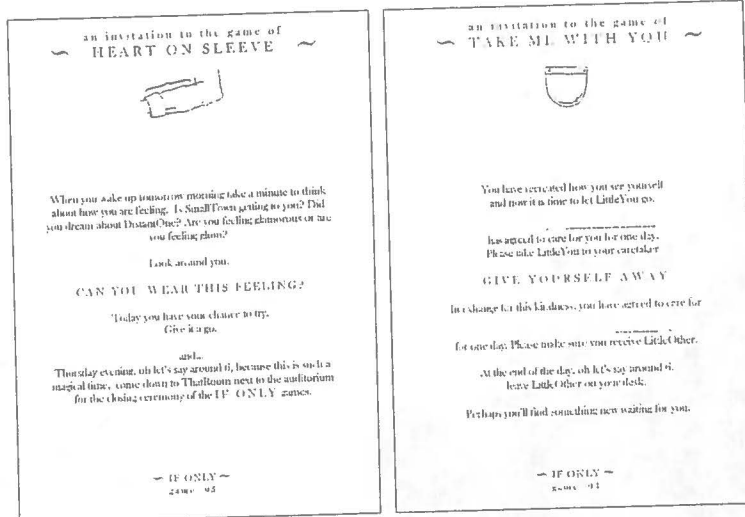
Method Three: Games

Sometimes, questionnaires are too formal, too textual or too much like a test. One alternative is to present the questions and interactions as games. These might be physical games—kinesthetic, visual, aural or merely cognitive. Games have a way of making people feel more comfortable and less judged. They can be used to initiate activities and prompt thinking and responses through stimulation of the senses.

Games can be solitary or involve interaction with others. The more they prompt responses, the more data collected and the more there is to learn about people's reactions and feelings. Games are sometimes judged too frivolous by researchers and designers, but research subjects tend to have a higher tolerance for novel approaches.

FARAWAY

A great example of how games can form the core of a design research project was also completed at the Interaction Design Institute Ivrea by Kristina Andersen, Margot Jacobs, and Laura Polazzi [Andersen et al. 2003]. These designers created an extensive number of "games" as a series of exploratory tools



Game cards from *Faraway*

designed to test different ways of embodying access and communication in the emotional space between two people. Their questionnaires took days or weeks to conclude instead of only minutes. **The games were designed to evoke emotional responses** along a variety of axes **in order to better understand the audience in general and specifically, the nature of relationships between distant friends, family members or lovers.**

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Their processes are well documented on their website Andersen et al. and include samples of each game, some of which are shown here.

One example, *Faraway*, was focused on exploring long-distance communication between loved ones. While *Faraway* didn't extend into the design process of creating new solutions, the set of games and other methods it utilized represent a valuable approach that can be used for the creation of any product, service, event or experience. In addition, it provides valuable insight into the nature of presence, emotional distance and emotional communication. In the creators' own words, the value of these games is in looking for emergence and evolution of the following:

• **Suspension of disbelief**

- Projection of presence
- Levels of ownership and affection
- Language
- Behavioral patterns

• **Rituals**

- Interaction with other means of communication
- Re-definition of functionality
- Emotional qualities about form
- Exploration of content
- Level of identification

Can be
included
in
Research

These are exactly the kinds of issues that designers need to address more

and more often and exactly the kinds of issues we are least prepared to investigate. The methods and processes we learn in design school and on the job are usually adequate for training us to think of the entire process and to work well in teams that incorporate many skill sets. However, **most designers are ill prepared neither to understand people beyond simple issues of usability (if at all) nor to address human needs from emotional and social perspectives.** Games like the ones created for *Faraway* are fairly easy to employ (thanks to their excellent design) and can speed designers to the kind of understanding that can lead to more meaningful, valuable and appropriate design solutions.

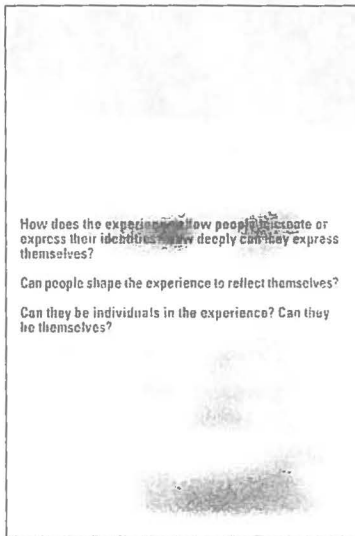
Experience Design Cards

An example that combines aspects of games, questionnaires and taxonomies are the *Experience Design Cards* I've created to accompany my *Experience Design* books as a design and teaching aid. While these cards are not yet sold publicly, the

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One of the Experience Design Cards



few people who have used them, including myself, find them another useful tool in our design toolbox.

The idea of the cards is simple. Each of the 50 topics of the *Experience Design 1* and *2* books introduces and discusses an important design issue for creating all kinds of experience. Each is also accompanied by an example of this issue well addressed to design in both real and digital worlds. As instruction and inspiration, the books are somewhat successful; however, they are difficult for some designers to use in their design processes.

The cards address each of the topics in the form of questions posed directly to the designer. Simply shuffling through the cards and posing the questions creates an opportunity for designers to remember to address more issues than might be in the initial project brief. The innovation consists primarily in convenience, and designers, of course, can create their own cards that address their own issues and processes. The cards can be used alone (and moving through each deck can actually go pretty quickly) or they can be used as an aid to brainstorming sessions. The idea isn't to design a solution for each question, but to evaluate whether the question is appropriate to the project context and only then address the issue in the design process.

If nothing more, these cards serve as mnemonics for designers, who are often too busy to introduce potentially distracting methods into their process, to remember to address questions of a wider context for the design of solutions. For example, every experience happens in time and 3-space, if only because the user or audience exists somewhere in the world. We often forget such simple facts as we focus on technologies or projects that are often narrowly defined in the beginning. Even experiences with websites have physical aspects (since people will be somewhere physically when accessing them). As long as interfaces, products, services, and events are created for people (and not machines), then these are necessarily, experiences with emotional, social, sensory and other human aspects. Tools such as the *Experience Design Cards*, or those developed in the projects described above, are ways that designers can begin to address these issues regularly and (somewhat) thoroughly.

Learning technique to remember to address questions in a wider context

Full-Spectrum Research

Designers regularly do themselves (and their intended audiences) a disservice by not addressing the full spectrum of experience when designing solutions. Experiences (and, by default, products, services, events, etc.) are much richer than most design processes reflect. We are only now developing tools that can help us address these wider issues in order to build better solutions.

Of course, this adds time to most processes and designers are already painfully aware that there is never enough time to do everything they intend on a project. Too often, we are required to jettison user testing, evaluations, descriptions and other ways of extending and deepening our understandings of our users and their contexts. Adding yet another set of dimensions to address doesn't, at first, seem like an aid. However, these approaches are critical—perhaps even more critical than other accepted aspects of user-centered design. If we aren't addressing social context, for example, applying technology may, in fact, create a worse solution (or situation) than designing nothing at all

. Certainly, this has been shown to be the case in many instances of twentieth Century "design" in industry, health, nutrition, food and materials science. We can't afford to be blind to human social contexts when applying technology to the solving of problems, partly because technologies may introduce new (and worse) problems, and partly because technologies are rarely the important part of a solution. Usually, various forms of human behavior have a bigger influence on a design's impact or acceptance.

All good design processes acknowledge the need for reflection time, to process our knowledge gained and to understand what we've already come to create

. Too often, we move from one step to another without even considering what was learned and what effects it might have on the final solution.

Finally, it is important for designers to take the time to develop their own methods and codify them into reproducible processes and artifacts. Too often, knowledge gained on a design project is lost forever and cannot be reliably employed on other projects. The time it takes to consider and document our design experiences and evolve them continuously into our design processes can make the difference between success and failure on a project. Certainly, well-documented methods improve consistency within organizations and greatly reduce training time. They can also help us create better solutions. But, most important, they make us better designers because they reorient our attention, focus and concerns in meaningful ways.

Importance
of
Archives
re methodology
&
research

