CHAPTER 9

Field Visits: Learning from Observation

Let's say you wanted to design a new, better showerhead—one that would really improve people's experience of bathing, without changing what they already like about it. Keeping clean is one of those seemingly universal behaviors that nonetheless means very different things to people. Where would you start?

You have probably taken at least a few showers in your life. So have all your friends and your family, too. You could design a showerhead based on how you and your friends take showers—but as we've seen elsewhere in this book, this kind of egocentric design can be a mistake. After all, the way you (or your friends) feel about showers might not be typical of the people you want to buy your hypothetical showerhead.

You could also interview a wide range of people about their preferences in shower accessories. While interviews might reduce your egocentrism, just asking people what they want can produce extremely convincing—but misleading—suggestions. Psychology research tells us that people often idealize their needs and desires. Statements about personal preferences often don't correspond to actual needs, values, and behavior.

"But surely," you think, "Showering is a very private activity. You can't just watch people!"

As it turns out, you can.

That's how Moen, a venerable bathroom fixture manufacturer, designed their Revolution showerhead. Realizing that they didn't know much about how people shower and what they look for in a showerhead, they partnered with QualiData, a research company. With QualiData, they recruited a group of ordinary people who wouldn't mind being watched in the shower: *nudists*.

With participants' permission, the researchers installed small waterproof cameras in their bathrooms. They watched participants shower, exactly as they normally would—without clothes, and without observers crowding the room. Then they interviewed the participants to learn about the experience. "You can see what they're protecting and what they're exposing," QualiData researcher Hy Mariampolski told *The Washington Post*. "It turns out that the shower is this emotional and almost spiritual experience."

The participants in their study, of course, wanted to get clean. But they also had other goals: to relax after a hard day; to get energized for a new one; to ease aches and pains. What QualiData and Moen realized through their observation, however, is that people's showerheads were frustrating these goals. The warm water from showerheads didn't seem to cover participants' bodies consistently; people trying to adjust the flow found themselves blinded by steam and soap. Ironically, they would wriggle and contort their bodies in order to get the sensations they associated with relaxation and calm.

Based on this research, Moen engineered a showerhead with wider water coverage and with an adjustment knob that was easy to use even with the eyes closed. That showerhead, the Revolution, became one of Moen's top sellers and won a Businessweek/IDSA silver medal in 2002.

We usually engage in user research to design a new product or improve an existing one—and often we enter a research project already aware of potential solutions. However, we can't limit our consideration of users' experiences to what seems directly relevant to the product. Products and services work well when they blend into our lives. The task of much user research is not just to discover product requirements but to understand how people live—and how they might like to live differently. Thus, from the user's perspective, the Netflix media streaming service is not simply about accessing lots of movies. It's about having a quiet evening with a spouse, killing time in an airport, or maybe indulging in a beloved TV show. The Netflix website recommendations and the streaming service are tools that make media consumption easier, but the real value lies with the experiences they facilitate.

One of the best ways to understand people's experiences is to see them for ourselves. The techniques in this chapter will help you

experience how potential users of your product or service live, how they think, and what problems they run into. As QualiData found out, with a little bit of ingenuity, you can observe almost anything.

What Are Field Visits?

Field visits are just what you think: going out of the office to meet people where they're most comfortable—that is, at their habitual places and activities. Field visits move research into offices, homes, shops, cars, public transportation, hospitals, factories, and gyms—any place important to your target audience (Figures 9.1–9.3). However, that doesn't mean your research can't also involve other techniques, such as diary studies or card sorting. The goal of field visits, like that of other methods, is to understand both *how* and *why* people do what they do.

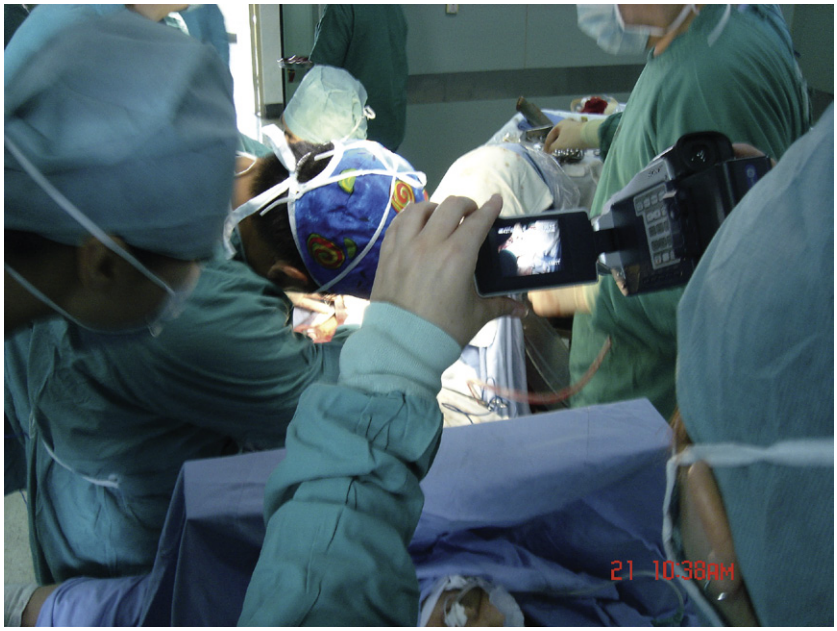

Figure 9.1 Researchers video record a surgical procedure. Image courtesy of Lextant.

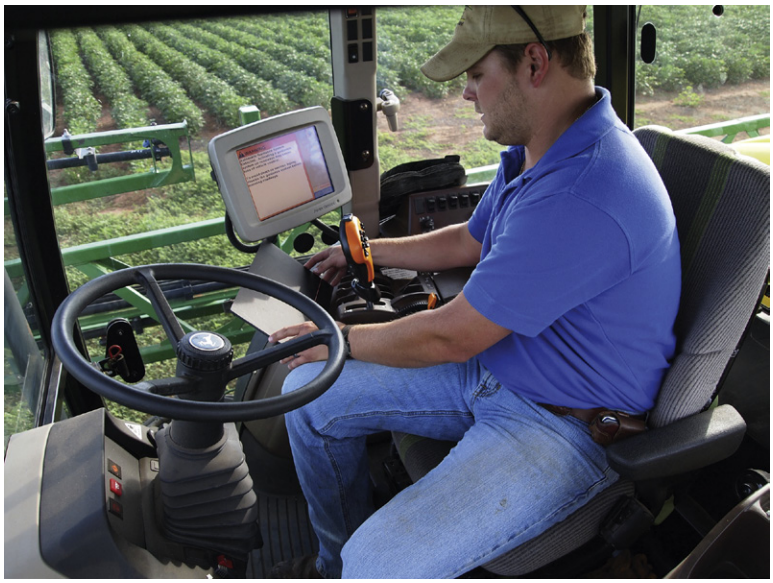

Figure 9.2 Field visit with a farmer. Image courtesy of Lextant.

Figure 9.3 Tour of a home office.

In other words, field visits give you information about the environment people live in and work in that you couldn't otherwise get. It helps you interpret their lives within the context of that environment—and not as they recall their lives while sitting in a lab or conference room. It uncovers what people really do, how they define what is actually valuable to them, and what will compete with your product for their time and attention.

In experiencing the world alongside them, you can better understand the problems people face and how your product can fit into their lives. This basic research method involves visiting people once or multiple times, asking them questions, and often following them as they go about their normal activities.

How Are Field Visits Used?

Most projects begin with an idea about an initial problem or situation and some rough ideas about how to respond to it. Field visits clarify and focus these ideas by giving concrete insights into the situation, what the situation entails, and how people cope with it. Thus, as with the showerhead example, they are usually done before the process of creating solutions has begun—most often the very beginning of the development cycle.

However, field visits are also useful in between development cycles or as part of a redesign. In those situations, they can tell you how people are using the product, when they're using it, and what they're using it for. This serves as a check of your initial assumptions, a way to evaluate the suitability of the product to its actual use, and a method of discovering areas into which the product can naturally expand.

For example, a major mobile device company was trying to understand why there were so many data entry errors on a mobile device for long-haul truck drivers. Many people in the company tended to blame the truckers, whom they assumed were uneducated. None of them had ever actually met a trucker, but they figured it couldn't be too hard to type in a word or two. One winter, a senior user interface (UI) designer decided to see for himself.

The designer spent a week at a truck stop watching truck drivers use the device and talking to them about it. He quickly discovered that the truckers could spell perfectly. Instead, the problem was

the device. The truckers tended to be big men, with big fingers. To make matters worse, they often wore bulky gloves in the winter. The device had tiny buttons, making typing with big fingers in warm gloves frustrating. The team redesigned the UI so that it required less typing and added a big OK button that was easy to hit while wearing gloves. The error rates dropped dramatically. More importantly, the team realized it had been basing important design decisions on faulty assumptions.

Field visits typically have one or more of these outcomes:

- *Specifying concrete details about actual use*. Researchers often observe how people work and play in order to help write concrete requirements that engineers can implement. In the mobile UI example, the designer discovered that the buttons were too small for the truck drivers to easily use. This kind of project is often called *requirements gathering*, though "gathering" is a misleading term. It's important to note that requirements are *produced* through skilled analysis and interpretation of research data. They don't just wait around like flowers to be picked.
- *Surfacing hidden understandings*. In everyday life, people have experiences that they can't recall or explain abstractly when asked. Take the question of showering: In the abstract, people may not be able to remember or explain how they take a shower, nor what they enjoy about it. Engaging with people in context helps us not just identify those moments of hard-to-explain emotions and activities, but also elicit discussion and description of how tools and technologies play a role in social relationships and internal states.
- *Challenging assumptions*. One of the roles of the user researcher is to (politely!) challenge incorrect, and sometimes insulting, assumptions about the intelligence, competence, and dignity of "users"—who are, after all, just ordinary people trying to use your product to accomplish their goals. We challenge these assumptions not just because it's the right thing to do, but also because our job is to help make more useful, more desirable, and more usable products. Informed empathy lies at the heart of better design. If the mobile UI designer had not visited the truck stop, his team would have had no better insight into the errors.

Table 9.1 A Typical Observation Schedule

Timing	Activity
$t - 3$ weeks	Recruit and schedule participants.
t	Observation and interviewing.
$t + 1$ week	Complete all follow-up interviews. Sort and organize research data for analysis. Begin analysis.
$t + 2$ weeks	Continue analysis.
$t + 3$ weeks	Write initial report.

Different types of field visits have different purposes and assumptions. The point of this chapter is not necessarily to advocate for one approach over another. Instead, the point is to help you choose the best approach for your project and then help you get started. Revealing hidden understandings is not necessarily in conflict with requirements gathering. However, it may be a waste of your time to try to get deep into the values and aspirations of your users when what you really need to identify—fast—is why truckers are making so many data entry errors.

What Ethnography Is…and *Isn't*

Over the past decade, many people have come to use "ethnography" as a catchall description for any kind of qualitative research taking place outside of a lab or other specialized research facility.

How you *do* research is much more important than what you *call* it. Nevertheless, there's been a lot of debate within the research community over using "ethnography" to describe onsite qualitative research. Understanding what the word "ethnography" has historically meant within social science and how commercial design researchers now use it will save you a lot of trouble and confusion. It will also help you do more interesting, more thoughtful, and more credible work if you plan to do ethnographically influenced observational research.

The term "ethnography" has a specific meaning and history to the social sciences, anthropology in particular. What we now call "ethnography" began with attempts in 19th-century Europe

to study places and peoples that seemed strange and exotic. Today, ethnography is widely practiced as a means to understand the worldview of many groups—from teenagers with mobile phones to waitstaff in bars.

Many scholarly ethnographers would not call ethnography a technique or method. Rather, they treat it as a goal of research. This makes sense if you think about the origin of the word "ethnography"—from the Greek "ethno" (people) and "graphy" (writing). So, ethnography is more about how ethnographers represent their subjects than any specific research activity. A quick rule of thumb: If you are using words that you, your boss, or your client invented to describe experiences and activities that you have never had and that are specific to your users or customers, you're probably not doing ethnography.

Ethnographers often characterize this distinction in terms of *emic* concepts (those native to a group) and *etic* concepts (those from outside). Ethnographers try to interpret and represent the differences between the two from their own perspective and from that of research participants. For that reason ethnography is often associated with the method of *participant observation*, in which the researcher actively takes part in a group's activities to learn from members experientially. However, for ethnographers trained in the social sciences, doing ethnography also requires knowledge of the history and theories of their discipline. This connection gives ethnographers a framework for asking questions, interpreting what they see, and situating it within a larger cultural context.

So, just performing participant observation—the main inspiration for the methods described in this chapter—will not automatically make what you are doing an ethnography in terms of social science. And that's okay! A lot of necessary, useful, inspirational, and valuable consumer research is not traditionally ethnographic in nature. But if your goals for a project include representing how people understand what they do and why they do it, then you'll find that at least a basic grasp on the history and theory of ethnography in social science is very helpful. There's a reading list on the book's website, but we recommend Michael Agar's *The Professional Stranger* as an expert and nuanced introduction.

The Field Visit Process

Since you'll be going out of your office and into the workplaces and homes of your customers, it's especially important to be thoroughly prepared. You won't have the option to go back and get something you've forgotten, and you—not your company's cool new leather waiting room furniture—will be the one making the first impression about your company.

Selecting Participants

Chapter 6 describes how to choose an appropriate set of participants in detail. But here's the short version: Pick people like the ones you think will want to use your product. Maybe they use the product already. Maybe they use a competitor's product. Maybe the people who use the product are different from the people who buy the product, so there are actually multiple important groups to consider. Regardless, your participants should resemble the people who will eventually use and/or purchase your product.

You should specify this target audience in as much detail as you can, concentrating on their behavior.

- What is their demographic makeup?
- What activities are most significant to their relationship with the product?
- What tools (digital and otherwise) do they regularly use in those activities?
- Are there tools they must occasionally use to solve specific problems?
- How do they use them?

Take this list and narrow it down to a few key factors. They may be demographic, such as location and income, or behavioral, such as tools used and attitudes toward the product/activity. In the showerhead example, Moen knew that it was aiming for North America and had a good idea of the stores (and hence likely customer budget) where it would sell its new showerhead.

There are two main strategies for selecting sites and people for observation. Your choice of strategy will reflect the priority of your

project. If your goal is to develop a wide range of new opportunities for design, you may want to follow the *extreme* or *lead user* strategy. If your goal is to solve a specific problem, you may want to follow the *typical user* strategy.

Typical User Strategy

After specifying your target audience, identify the most important activities and groups of customers. Your product may appeal to a varied group of people, but there are only going to be a couple of key target markets defined by the factors you earlier identified. In fact, there may be only one. Focus your research on participants who share the most common key factors until you feel that you know what there is to know about their behavior, and then move on to secondary markets.

Extreme/Lead User Strategy

After identifying a domain of interest and specifying the possible audiences, ensure as much diversity in key factors as possible. Instead of looking for "typical" users, look for people who are extreme in some way—extremely enthusiastic users, extremely negative or resistant nonusers, or "lead users"—people who are ahead of most in adopting a new technology. For example, an extreme user strategy for designing a new showerhead might be to look for people who really love showering and who have invested a lot in their perfect shower, then contrast them with people who hate showering and who only take baths.

You may find that extreme users make visible behaviors or desires that are present in users that are more "typical" but are harder to see. You may also find that widely divergent participants may suggest a broader set of opportunities than a narrow (though deep) study of one particular group.

Recruiting

Once you have your profile, you need to find people who match it. A complete description of recruiting is in Chapter 6, but here are some things to consider.

First, decide how many people you want to visit. The number will depend on how much time you have allocated to the research and the resources available. We think designer Kim Goodwin's suggestion of four people per important factor in your analysis of the target audience is a good starting point for a quick project. So if you're interested in showering, you might interview four people who shower a lot and four people who don't like to shower at all.

If you have more time, five to eight people per factor should give you a pretty good idea of how a big chunk of the target audience does their work (or entertains themselves, or shops, or whatever the focus of your product happens to be) and should be enough for a first round of inquiry. If you find that you have not met the goals of the research or you don't feel comfortable with the results of the first round, schedule a second round.

Scheduling

After finding some candidates, you need to schedule time to visit them. Observational research sessions can last from a couple of hours to multiple full workdays, depending on the length of the tasks and how much ancillary information you'll be collecting. The most important criterion in scheduling is that the people need to be doing the kinds of activity you're going to study *while you're observing them*. You may need to negotiate timing in order to show up when they're doing the relevant tasks. You may need to ask them to wait until you arrive. If you are doing an on-site interview (rather than a full observation activity), it may only take you an hour or two.

If you are interested in complex activities achieved by multiple people working together, it is a good idea to schedule multiple days of visits, with a team of more than two people. That way, you get a more complete perspective on how people's jobs fit together. During the day, You should also make time at least once to meet with other people on your team to share what you're seeing and discuss any emerging insights into patterns of behavior.

If you do not have the time, budget, or team members to make all the visits you think are necessary, it's time to revisit your research plan (see Chapter 4) and rethink how you will answer your research questions—or if you need to rescope your goals for the project.

Since the research is going to be on-site, give the participants some idea of what to expect when you arrive. Before you show up, tell them the general goals of the research, how long it will take, the equipment you will use, and what kinds of activities you want

to observe. You don't have to be specific (and, in fact, leaving some specifics out can produce a more spontaneous response), but they should have a good idea of what you are asking of them. That way, you minimize the chance of unwelcome surprises for both you and the participants. You will need to get consent from all participants before taking photographs or video of them, so it's an especially good idea to clarify your documentation plans ahead of time. Finally, ask them not to prepare for your arrival at all. People tend to tidy up their living and working space when a stranger arrives, so make it clear that it's important for you to see their daily environment, warts and all.

When studying people in office environments, it's often necessary to get releases and to sign nondisclosure agreements. Sometimes it's possible to do stealth research under the promise of anonymity, but this approach brings real ethical and pragmatic problems. When you do not tell people you are a researcher, you are essentially spying on them. You are violating their privacy. Pragmatically, field visits are hard to overlook. People are unlikely to ignore a stranger taking photos, waving around a video camera, or obsessively taking notes. If there's any doubt that your visit might come as a surprise, ask the people you've scheduled to tell everyone who needs to know about your arrival and to get you all the forms you need to have as early as possible.

The incentive payment to each participant should reflect the length of the observation. Generally, this means something between $100 and $200 for most visits. Some companies may have policies restricting such payments to their employees, which should be determined ahead of time (this is especially true when the company being studied is the same company commissioning the research—as is often the case for intranet or in-house software projects).

If you are working within a company that already does a lot of marketing or user research, you should check if there are rules about payments to research participants. Some companies prefer giving cash; others use cash equivalents, such as gift cards. Accounting for payments also differs across companies. Some use a signed consent form as a receipt; others will want a separate signed receipt. Learning the rules ahead of time will make project accounting a lot easier on everyone.

Remember, research participants are doing *you* a favor by welcoming you into their homes and workplaces. If cash payment is forbidden, then a small gift may be appropriate (though not for government agencies or regulated industries). Follow-up interviews should be treated likewise unless you agree with the participants ahead of time on a single lump sum (in which case, it should reflect the total amount of time spent).

Learn the Domain

In order to be able to understand what people are doing and to properly analyze your data, you need to be familiar with what they do. This means getting to know the terminology, the tools, and the techniques that they are likely to be using in their work. You don't have to know all the details of their job, but you should be somewhat familiar with the domain.

If you know nothing about an activity or domain, before you visit you'll probably want to start with some preliminary research. Online forums or discussion sites, in which experts give each other advice, will help familiarize you with everyday terms and concerns. Personal photography sites, in which people share snapshots of their everyday lives, can also provide a window into any unfamiliar environments you will be visiting. Once you've done some initial reading, you have some sense of what you've gotten yourself into. You can go further by asking a friendly expert who is not connected with the project to walk through the basics of their job. He or she doesn't have to go into complicated technical explanations, just enough to familiarize you.

If possible, try a typical task yourself. This is the most basic form of participant observation. If it requires some physical skill, you may need to get special access to tools and equipment (this works well for things like making pizza, but not so well for things like brain surgery). You can often get access to software and a training manual for a couple of hours. Sometimes you can experiment with a similar—but easier—activity in order to start engaging with the experience. For example, researchers studying a biology lab made themselves measure and chart all the activities involved in making a cup of tea, just as if they were titrating a solution. Of course, making tea is not laboratory biology. But it helped them put themselves in the position

of someone who had to document every single part of a task. If the environment you're studying is a technical one, ask a member of technical support or quality assurance to walk you through some typical tasks to see how they, as expert in-house users, do them.

In general, it's a good idea to start with "beginner's mind"—to act as if you are just coming to a topic or audience, even if you think it's very familiar to you. That way, you can make yourself more sensitive to details you might otherwise take for granted. If you are preparing to study a clearly unfamiliar cultural group—perhaps people who speak a different language, live in a different country, or follow different religious traditions—take a look at the recommendations for cross-cultural and global research in Chapter 13.

Some people will tell you to take a "neutral" or "unbiased" position to field visits. However, we think total objectivity is an unrealistic expectation. Everyone has experiences in the past and expectations for the future that influence their view of the world. That's what being human is all about! Instead of futilely trying to rid yourself of personal beliefs and preferences, we recommend reflexivity *instead. Be clear to yourself and others about your expectations for the project, then work actively to counteract them. That way, you can enter each new situation with a more open mind to its possibilities.*

Make Your Expectations Explicit

As part of your preparation, get clear about your expectations. Write down how and when you expect people to do things that are important to your product, and what attitudes you expect they will have toward certain elements. You can do this with other members of the development team, asking them to profile the specific actions you expect people to take. When you're in the field, keep these scenarios in mind. Use the situations where what you see doesn't match your expectations to trigger more investigation. This is especially important when, as with the typing truck drivers, it's clear that you aren't the only one in your company who expected to see something different.

Preparing for the Visit

Sometimes real-life situations unfold very differently from your expectations. You may be counting on one kind of situation–say, a typical day using the typical tools–and you find something completely different, such as a crisis where the main system is down or workers are scrambling to meet an unexpected deadline.

In addition to all the research-related preparation, do these things just because you're leaving the comfort of your office:

- Make a list of everything you're going to bring—every pencil, consent form, and notebook. Start the list a week before you're going to visit your first site. Then, whenever you remember something else you should bring, add it to the list. A day before you visit the site, make sure you have everything on the list and get everything you don't. On the day of the visit, cross off everything as it's loaded into your backpack or car.

In such situations, pay attention to how the unexpected situation is resolved and compare that to the situation you had expected and that others experience. If the situation is very atypical–it happens only every five years, or the people you're interviewing have been pulled into a job that doesn't relate to a task you're studying–try to get them to describe their normal routine, maybe in contrast to what they're doing at the moment. If the situation seems like it's too far off from what you're trying to accomplish, reschedule the visit for a time where their experience may be more relevant to your research goals.

- Make sure you have twice as many media releases and/or consent forms as you expect to need. During the field visit, more people could show up than you planned for—and if you don't get their consent, you won't be able to share all those amazing things they tell you.
- Put everything you need to make and track incentive payments in one container that you can carry with you inconspicuously, like a large envelope or small bag.
- Know how to operate your equipment. Set up a test site that will simulate the user's work environment ahead of time. A day or two before, set up everything as you're going to use it on-site, complete with all cords plugged in, all tripods extended, all cameras running, and all laptops booted. Then, break it down and set it back up again. Get a set of good headphones to check the quality of the audio. Good audio quality can make the difference between usable and useless media files.
- Have more than enough supplies. Bring an extension cord with multiple outlets, extra recording media, two extra pads of paper, and a couple of extra pens. You never know when a card will fail or an interview ends up being so exciting that you go through two notepads. Take extra batteries for every piece of electronics you own that requires separate batteries.
- Plan for meal breaks and debrief time. Closely watching someone for several hours can be draining, and you don't want to run around an office frantically looking for a drinking fountain while worried that you're missing a key moment. Bring bottled water and plan to eat between sessions. It's sometimes helpful to have lunch with your participants, which can be a good opportunity to get background on their jobs in a less formal setting.

Caution: Videographer on the Loose

Video is useful for capturing the details of both environments and behavior. It doesn't have to be Hollywood-quality; it just needs to be good enough to share with stakeholders as part of your reporting.

There are some reasons to be careful about using video, however.

- Video can give the impression that it is an objective and complete recording of what happens. That's not true! Video captures just one perspective—the perspective of the person who shot it. As one remedy, architectural researcher Jonathan Bean suggests handing a second camera over to a participant so that the participant can document his or her own perspective.
- Managing the camera—moving it around, changing focus, etc.—can actually prevent you from seeing what you came to see. Don't get so focused on working with the camera that you can't ask questions and make decisions on the fly. Having one team member act as videographer and another focus on asking questions and in-depth observation can help solve this problem.
- Video may not always be appropriate everywhere, especially where privacy is important or informed consent may be impossible. For example, in a hospital, you may need to develop alternatives to video—and get good at taking fast, detailed notes.
- Video takes a long time to analyze. Many people put lots of energy into taking hours of video, only to realize that they have no time to watch it later. Be realistic about whether you'll ever watch that footage again before you invest a lot of time in taking and processing it.

Establishing a Relationship

If you are going to be talking with participants, one of the most important activities in observation is establishing a rapport with them. "Rapport" here means a comfortable working relationship. It doesn't require friendship, but it does mean that people should not be afraid of you or hostile to your presence. If you sense fear or hostility, try to figure out the cause. You may need to clear up some misunderstandings about your role (see below for some roles to avoid).

Since you want to observe people acting naturally, it helps to structure your visit with them in a way that helps people

understand what you're doing there. As Hugh Beyer and Karen Holzblatt point out in their classic *Contextual Design*, observational research (or what they call "contexual inquiry") tends to follow two main patterns:

1. The *master/apprentice model* introduces you as the apprentice and the person you're observing as the master. You learn his or her craft by watching. Occasionally, the apprentice can ask a question or the master can explain a key point, but the master's primary role is to do his or her job, narrating what he or she is doing while doing it (without having to think about it or explain why). This keeps the "master craftsman" focused on details, avoiding the generalizations. Generalizations may gloss over key details that are crucial to understanding how people actually live and work.
2. *Partnership* extends the master/apprentice model. The interviewer *partners* with the participant in discovering the details of work. The partner asks questions in order to surface problems and ways of working. The participant is occasionally invited to step back and and consider the reasons for his or her behavior. This discussion can make the participant aware of the elements of his or her work that are normally invisible to him or her. Although this can potentially alter the participant's behavior, it can also provide critical information.

In both cases, feel free to ask questions that seem obvious, stupid, or naïve. Those are the kinds of questions that can help you explode your own assumptions or dig deeper into experiences that your participants might assume you understand already.

There are also several relationships to avoid.

- The *interviewer/interviewee*. Normally, an interviewer's questions prompt an interviewee to reveal information. Interviewees won't reveal details unless specifically asked. That's not desirable for site visits. You want the participant's work and thoughts to drive the interview. When you find yourself acting as a journalist, prompting the participant *before* he or she says something, take a deep breath and give the person you're watching time to act or talk.

- The *expert/novice*. Although you may be the expert in design, the participants are experts in their own domain. Beyer and Holtzblatt suggest, "Set the customer's expectation correctly at the beginning by explaining that you are there to hear about and see their work because only they know their work practice. You aren't there to help them with problems or answer questions." It should be clear that the goal is not to solve the problems then and there, but to know what the problems are and how they solve them on their own. If the participant asks for your expert advice, use nondirected interviewing techniques to reverse the question: for example, "How would *you* expect it to act?"
- Similarly, you are not the *complaint department*. While of course you are interested in hearing about frustrations and difficulties with different products, giving too much time to them can turn your observation session into tech support. Depending on your relationship to the client and participant, you could also be getting yourself into trouble. Designer Kim Goodwin writes in *Designing for the Digital Age*, "Never step on the toes of the sales person who got you the interview. It could damage the company's relationship with the customer and will definitely erode the sales team's trust in you."
- Don't be a *guest*. Your comfort should not be the focus of attention. You are there to understand how they do their work, not to enjoy their hospitality. But do be flexible. If good manners dictate acting as a guest for the first few minutes of your visit, then do so to make the participants comfortable. After that, quickly encourage them to get on with their work.
- Another role to avoid is *big brother*. You are not there to evaluate or criticize the performance of the people who you are observing. Try to make that as clear as possible. If they feel that way, then they're not likely to behave as usual. Moreover, if participation in your research is at the request of company management, it can seem that your presence is just a sneaky way to check on them. Emphasize clearly that you are *not* there to evaluate their performance. If possible, get permission from management to contact and schedule people yourself rather than having the request come as a demand from above.

Sometimes management may want you to report on specific employees and their performance without the knowledge of the employees. Reporting on people's actions and opinions without their knowledge and explicit consent is *always* unethical. It violates any promises of confidentiality that you may have made to an interview subject–and it may violate labor laws. Needless to say, your first responsibility is to honor your research participants' trust in you. In such situations, clearly explain the ethical and legal problems with this request to management.

Structuring Your Time

There are three basic components to a field visit:

1. Introduction
2. Main observation period
3. Wrap-up

Introduction

Schedule time for an introduction and warm-up conversation. These are moments for the participant and the observer to get comfortable with each other and to set up expectations for the observation. This is the time to get all the nondisclosure and consent forms signed, describe the project in broad detail, and set up the equipment.

Make sure that the image and sound recording is good, and then don't fuss with the equipment again until the interview is over, since it'll just distract everyone.

If you're taking notes (and usually, you will be), show the participant your notebook and explain what kinds of things you'll be writing down. You'll probably make people a little nervous if you just whip out a notebook and start scribbling at top speed without any warning.

Describe roughly what you are interested in learning more about, emphasizing your role as an observer and learner. Remind the participant to narrate what he or she is doing and not go for deep explanations.

If you are there to "shadow" people as they work, you may not need or want to bring your own schedule to your visit. For example, a nursing shift has its own rhythm—from the shift handover meeting at the beginning, to juggling different medication and intervention schedules throughout the hours, to periodic charting of notes, to another shift handover meeting at the end. The job of the researcher at that point is simply to follow the nurse, take good notes, and try to save up questions for an appropriate time. The same goes for shorter activities—such as making dinner or commuting from work.

During the introductory conversation, you may want to ask some general questions to gain an understanding of who the person is, what his or her job is, and what tasks he or she is going to be

We're using the word action *to refer to a single operation during a task. In most cases, it's something that takes a couple of seconds and fits a single, simple idea. Actions cluster into* tasks*, which are things that satisfy a high-level goal. Task granularity can range all over the board. A task can involve something as straightforward as filling out a form or something as complex as picking out a car. See Chapter 17 for more on task analysis.*

doing. Ask the participant to describe the last time he or she performed the activity at hand. For example, if you're watching someone at work, ask about the previous workday. What happened? Was it a typical day? How does what the participant is doing fit into that day? Don't delve too deeply into the reasons for what he or she does; concentrate on actions and the sequence.

Main Observation Period

Being aware of the disruptive role of the observer is a crucial part of observation. That's why the showerhead researchers wanted people who would be comfortable showering naked while under observation. If you sense that the person you're watching is not doing a task in the way that they would do it if you were not watching, ask him or her about it. Ask whether how he or she is doing it is how it should be done, or how it *is* done? If the former, ask the participant to show you the latter even if he or she says it's "really complicated" or "not interesting."

The *main observation period* is where you are following people as they do some work. This phase should comprise at least two-thirds of the visit.

Most of the time should be spent observing what the participants are doing, what tools they are using, and how they are using them. Begin by asking them to give a running description of what they're doing, as to an apprentice. That means just enough to tell the apprentice what's going on, but not enough to interrupt the flow of the work—and then tell them to start working. As an apprentice, you may occasionally ask for explanations, clarifications, or walkthroughs of actions, but try to stay unobtrusive. Write down your questions and save them for a quiet moment.

Wrap-up

When either the task has ended or time is up, the main interview period is over. An immediate follow-up interview with in-depth questions can clarify a lot. To quote Victoria Bellotti, Senior Scientist at Xerox PARC, "You'll never understand what's really going on until you've talked to people about what they are doing. The [follow-up] interview…gives you the rationale to make sense of things that might otherwise seem odd or insignificant."

Certain situations may not have been appropriate to interrupt (if you're observing a surgeon or a stock trader, that may apply to the whole observation period), whereas others may have brought up questions that would have interrupted the task flow. As much as possible, ask these while the participant's memory is still fresh.

You can start by going over what you learned that day. To jog people's memories, you can even take out your video and show

Provide privacy when people need it. Tell the people you're observing to let you know if a phone call or meeting is private–or if information being discussed is secret–and that you'll stop observing until they tell you it's okay to start again. Pick a place to go in such a situation (maybe a nearby conference room or the cafeteria) and have them come and get you when they're finished.

them the sequence you'd like them to describe (but only do this if you can find it quickly, since your time is better spent asking questions than playing with the camera).

If there are too many questions for the time allotted, or if they're too involved, schedule another meeting to clarify them—and schedule it quickly, generally within one or two days of the initial interview, since people's memories fade quickly.

Wrap up the interview by asking the participant about the observation experience from his or her perspective. Were any questions that he or she expected but *didn't* get from you? Was there anything about it that made him or her anxious? Is there anything the participant would like to do differently? Are there things that you, as the apprentice, could do differently?

What to Look For

It's rare to enter any research project without some clear questions to answer. However, you don't want to get so focused on answering your questions that you miss what people are trying to tell you. It can be easy to feel that because you're not seeing what you expect, there's nothing useful to see. Other times, you just feel overwhelmed by all the new activities happening around you. You end up feeling like no matter what you look at, you're missing some crucial incident. Most of the time, since you can't pay attention to everything equally, the kinds of data you collect will reflect your initial questions, adapted to what you experience during your observation.

If your expectations are completely off, there's no point in sticking to the plan. That being said, there are a few organizing systems to help you get the most out of your visit—even when you don't think there's anything interesting to see. The feeling of surprise is what lets you know that you have entered the project with an open mind, and moments of surprise can be valuable learning experiences.

AEIOU Framework

The Doblin Group's eLab developed a helpful organizing framework for field data analysis in the 1990s. Here's ethnographer Christina

Wasson's description of things to look at and keep track of when conducting observations, helpfully arranged as a mnemonic:

- *Activities* (A) are goal-directed sets of actions—things that people want to accomplish.
- *Environments* (E) include the entire arena where activities take place.
- *Interactions* (I) are between a person and someone or something else and are the building blocks of activities.
- *Objects* (O) are building blocks of the environment, key elements sometimes put to complex or unintended uses, changing their function, meaning, and context.
- *Users* (U) are the consumers, the people providing the behaviors, preferences, and needs.

The AEIOU framework can be especially helpful when you are just starting your observation and need to catalogue and categorize what's happening around you.

Contextual Inquiry

Beyer and Holtzblatt's *contextual inquiry* framework can help guide a more directed, task-focused observation. Beyer and Holtzblatt suggest paying attention to four kinds of information when observing people at work. Each of these elements can be improvised or formal, shared or used alone, specific or flexible.

- *The tools they use.* This can be a formal tools, such as a specialized piece of software, or it can be informal tools, such as a scribbled note. Note whether the tools are being used as intended or if they've been repurposed. How do the tools interact?
- *The sequences in which actions occur.* The order of actions indicates the participant's thoughts about the task. Is there a set order dictated by the tools or by office culture? When does the order matter? Are some things done in parallel? Is a task one continuous sequence or is it accomplished through intermittent actions? How do interruptions affect the sequence?
- *Their methods of organization.* People group some information together for convenience, and some out of necessity. The

groups may be shared or unique to individuals. How does the target audience organize the information they use? By importance? If so, how is importance defined? By convenience? Is the order flexible?

- *What kinds of interactions they have.* What are the important parties and roles? Are they people? Are they processes? What kinds of information are shared (what are the inputs and outputs)? What is the nature of the interaction (informational, technical, social, etc.)? What do people expect from these interactions? What outcomes are they getting?

These frameworks are entirely compatible—you can use one or more or make up your own. However, your time and attention are always limited. Here are some tips and tricks for getting the most out of observation.

Pay (More) Attention to the Environment

The spaces in which people work and play are vital to understanding how people live. Learning to closely observe those spaces, however, takes work—because we take so much around us for granted. Part of observation is learning to defamiliarize ordinary places and see them as if you're a stranger to them. As well, the understandable emphasis on learning how to ask questions and interpret answers can sometimes excessively focus our attention on what people say—and distract us from a systematic analysis of the spaces around them.

One of the first things to do when you enter a new place is to examine the environment around you, especially those aspects that seem particularly relevant to the tools used in the activity you're following. These aspects can include:

- Light levels
- Temperature
- Dust, dirt, and moisture
- Noise levels
- Litter and other traces of use

These are all important considerations for design. Unless protected, digital devices are sensitive to heat and moisture. Audio

feedback will likely be useless in a very noisy space—and unwelcome somewhere expected to be quiet and serene. Screens may not be readable in bright sunlight. Trash and other litter will tell you where people have congregated in the past—even though the space now seems empty. In learning the domain, you will probably come up with other relevant aspects. Try to be sensitive to touch, smell, and hearing as well as sight. Does what you see and hear match what your other senses tell you?

What you experience as pleasant or unpleasant physical conditions may not seem that way to research participants. Part of what's fascinating about user research is gaining insight into how people can experience the same phenomena in very different ways.

Next, examine the physical arrangement of the environment. The places people inhabit signal their relationships with each other and with the objects around them. They can suggest what people value, what they celebrate, and what they dislike. Places also influence how people form relationships and these relationships can be harder to observe than heat and dust, so use what you see as prompts for follow-up questions. Here are some questions to ask yourself during observation:

- How much room do people have? Are they cramped or is there empty space? Which areas are more full of "stuff"—things, people, noise, light, etc.—than others?
- Is the space open to all, or is it divided between people?
- What (and who) do people keep easily accessible, or in plain sight? What do they tidy away, lock up, or keep hidden?
- What areas have restricted access, and who can enter them? How do you know you are not supposed to enter them?

For a quick starter exercise, go into your own bathroom. What's the difference between the objects you put in a bathroom cabinet and those you leave lying openly on the sink? Now go into your bedroom. Do you share it? How do you differentiate, if at all, between what belongs to each person? Now walk through your kitchen. How does its layout differ from that of a family member's, and do the different layouts affect how you make dinner?

Ask permission before rummaging around people's personal spaces—but don't be afraid to ask. You're not just (or only) being nosy. It's part of your job. However, don't push ahead if people seem hesitant or protective of privacy. Ask speculative questions instead, such as: "What part of the house makes you feel most comfortable?"

Additionally, you'll want to understand how people keep necessary tools up and running. You should have established some initial expectations ahead of your visit, but try to verify them. For example, you may been told that technical support is not important—but on the ground, you witness people struggling with problems that they never bother to report. The range of potential tools

and difficulties is vast. For example, here are some initial suggestions that might be relevant to the design of digital products, especially mobile and portable electronics:

- Do people use their own equipment at work? Or does an employer provide what they need, and repair it when it breaks?
- Is there always reliable access to the electrical grid? What about Internet access?
- How do people replenish exhausted supplies such as batteries or paper?

Some resources, like access to the Internet, printing capability, and the presence of plug-in electricity, may be visually obvious. Others, like the reliability of electricity, the ownership of equipment, and the availability of technical support, will probably require some questioning to establish.

If, as often happens, you are planning a long interview as part of your visit to a home or workplace, make sure you spend some of your budgeted time getting a tour of your participant's everyday surroundings. You may also want to ask people to draw maps of their environments for you (see Chapter 8). Then you can use those maps to draw out stories from participants about what their spaces mean to them.

Seek out Workarounds

Workarounds are what they sound like: situations in which informal, ad hoc responses to a problem have become the status quo. When a light needs to stay on permanently and so the switch is taped in the "on" position—that's a workaround. When people share passwords so that everyone can access restricted digital resource—that's a workaround. When thick books are stacked underneath a computer monitor so that the screen is comfortably at eye level—that's a workaround, too.

Workarounds are often harder to discover than overt failures and frustrations because they represent solved problems. Those solutions, however, may be causing other problems. Moreover, there may be a more satisfactory solution available that the workaround creators did not imagine or could not implement. Alternatively,

perhaps the workaround is a fantastic solution that should be implemented everywhere. Nevertheless, workarounds mean that *there once was a problem*. But with the immediate need met, your participants may have forgotten that the problem ever existed. Workarounds are one of the main reasons why field visits are so useful. It's hard to get people in a focus group to identify a problem they've forgotten they ever had.

When asking about workarounds, try not to sound judgmental or accusing, especially if your participants are actually breaking a rule (as with the sharing of passwords). People will not help you if they think you're going to get them in trouble.

Some signs of a workaround:

- Objects used for unintended purposes (e.g., the stacked books)
- Widespread, casual, accepted rule breaking (e.g., the shared passwords)
- Improvised physical interventions (e.g., the taped light switch)

When you see something that looks like a workaround, ask how it got there. That may give you some insight into the original problem.

Collect Artifacts

When we say "artifacts," we mean the nondigital tools people use to help them accomplish their tasks. Documenting and collecting people's artifacts can be extremely enlightening. For example, if you're interested in how people plan activities, it may be appropriate to photograph their calendars to see what kinds of annotations they make, or to videotape them using shared calendars like the ones written on many office whiteboards. If you're interested in how they shop for food, you may want to collect their shopping lists and videotape them at the supermarket picking out items. Pay attention to all the artifacts at work in an activity, even if they don't seem entirely related to your project. It's doubtful that you'd want to collect a surgeon's instruments after an operation, but you may want to record how they're arranged.

Always make sure to ask for permission before you copy or collect artifacts.

Sometimes, as in health care environments, there may be privacy concerns that prevent you from viewing or collecting an artifact. However, a faked paper form or doctor's note is undesirable. It will likely be idealized and miss some of the mess and variety of the real one. Ask permission to watch a participant work with the

real thing, and then take a blank form as a reminder of how the information was organized.

Note Taking

How to take notes during observation is a key question to consider ahead of time, even if you are video and audio recording. We find that taking occasional notes while concentrating on participants' words and actions works well, but it requires watching the videotape to get juicy quotations and capture the subtlety of the interaction. Others recommend taking lots of notes on-site and using the videotape as backup.

Taking notes doesn't require fancy gadgets. In fact, what you want is something simple, cheap, and unbreakable. Most researchers still rely on pen and paper.

Note taking isn't just about you. It also affects your relationship with participants. There are very real negative consequences to paying too much attention to what you're writing. While the etiquette of listening differs from place to place, interviews depend on how we appropriately signal attentiveness and respect. Looking people in the eye, smiling, turning your body toward them—all of those can be meaningful signals. If you are constantly looking down at a notebook, participants may feel like you don't care about what they're saying. You will also miss lots of meaningful body language and hence lots of opportunities to probe more deeply when what participants are saying doesn't quite match how they're saying it.

You will want a clear method to highlight your follow-up questions. One way is to write them in a separate place from the rest of his notes. Another way is to keep follow-ups scattered throughout the notes, but mark them so you can find them again.

You will also need to clearly differentiate what you see and hear from your interpretations about what it all means. Confusing observation with your personal interpretation leads to inaccurate analysis later, because you can so easily end up replicating your own biases and assumptions. The easiest way to avoid this problem is to visibly separate different kinds of notes as you go. You can do that by:

- Writing observational notes on one side of the paper, interpretation on the other
- Highlighting interpretation with brackets, asterisks, or other typographic marks like [this] or **this**
- Using a different colors of pens or pencil

For an example of what field notes look like, here is a snippet from an observation of a health insurance broker using an existing online system to create a request for proposal (RFP):

> Looks at paper [needs summary] form for coverage desired. Circles coverage section with pen.
>
> Goes to Plan Search screen.
>
> Opens "New Search" window.
>
> "I know I want a 90/70 with a 5/10 drug, but I'm going to get all of the 90/70 plans no matter what."
>
> Types in plan details without looking back at form. **Because he's so familiar with it?**
>
> Looks at search results page.
>
> Points at top plan: "Aetna has a 90/70 that covers chiro, so I'm looking at their plan as a benchmark, which is enough to give me an idea of what to expect from the RFP."
>
> Clicks on Aetna plan for full details.
>
> Prints out plan details on printer in hall (about three cubes away) using browser Print button. Retrieves printout and places it on top of needs summary form.
>
> Would like to get details on similar recent quotes.
>
> Goes back to search results. Scrolls through results and clicks on Blue Shield plan.

Why Can't You Just Ask People?

Field visits take more time and effort than other techniques. Observational research generates enormous amounts of data that you then have to analyze. Moreover, despite a long and quite successful history of use in ergonomics, product design, and information systems design, it can seem exotic to people more accustomed to surveys and usability labs. So it's understandable that people often ask, "Well, why *can't* you just ask people what they want?"

We touched on this question briefly early in this chapter. But it's important to return to it, because there are some common

concerns that those planning observational research often need to address. These concerns (and their responses) draw in large part from an article by corporate ethnographers Brigitte Jordan and Brinda Dalal.

"This Takes Too Long"

There's a lot to learn from field visits, even if you just have an afternoon. You can use what you learn from a brief period of observation to argue for dedicating more resources to visiting your audience on their home turf.

"This Costs Too Much"

The question is, "Compared to what?" How is the budget being spent now? Doing some field visits early can help avoid sinking huge amounts of time and money into products that turn out to be undesirable or unusable. It can be helpful, suggest Jordan and Dalal, to ask clients or managers to express their fears so that you can address them specifically. It can help to talk about other projects that required costly fixes late in the development cycle because the product did not match the realities on the ground.

"Don't Bother. We Can Do This Faster and Cheaper with Market Research and Focus Groups"

Traditional market research and user research are complementary. Market research attempts to map the size of the potential consumer base in order to drive business decisions. In order to make those decisions, market research requires a well-defined product. Field visits are one of the tools we use to design that product.

Focus groups and surveys are useful, but they are prone to multiple biases. First, people aren't always good at remembering and reporting all the details of what they do. Second, it turns out that people aren't very good at predicting what they will do in the future. For example, take the case of complex personalization features. Many product teams have been perplexed as to why no one uses personalization features after the vast majority of survey

respondents claimed to want them. The reason is simple. Ideally, people would love products tuned perfectly to their preferences and needs. But the actual tuning process is much harder than first imagined. So although survey respondents would indeed love a service personalized as they imagine it, when faced with the pragmatics of customization, they give up and use the plain vanilla service. Observational research helps you get a better sense of what kinds of efforts people are prepared to make.

"Couldn't I Just Go Myself and Watch for a While?"

It's true that it can be helpful for clients and other stakeholders to experience the contexts in which the products they design will be put to use—especially if those contexts are unfamiliar to them. But, as we're sure you're beginning to realize, user research requires effort and learned expertise. Field visits may look like "hanging out," but the observation, the analysis, and the communication of results require rigorous thought and skill. Sometimes, you may need to have someone your questioner finds credible to explain (in writing, if possible) why field visits are more than just "watching for a while."

"You Can't Generalize from This!"

It's also true that time and budget constraints will mean that observational research will only include a limited sample. Typically, field visits include multiple sites to look for shared patterns, and researchers ask about typical and atypical events in order to check that what they are seeing is typical. But the real question is, how far does the research need to generalize? Often, Jordan and Dalal point out, the research doesn't need to generalize very far. For example, does this work need to apply to all call centers? Or just call centers for this one industry? Or just for this one company?

"What Kind of Results Can You Give Me?"

This one, Jordan and Dalal suggest, actually stands in for multiple questions. One question is about return on investment and getting

some measurable benefit for the time and money. Alternatively, this might be a question about the sorts of deliverables that field visits produce and how to share them. In that case, you need to discuss what kinds of information designers, marketers, engineers, and businesspeople actually need, and what kinds of collaboration might help productively influence the development process as it proceeds.

Conclusion

> *Sometimes the obvious is not always apparent. The obvious things don't bubble to the surface all the time.*
>
> Jack Suvak, marketing director for Moen, Inc., in *The Washington Post*

We observe people in the field because what's obvious, as Suvak says, isn't always apparent. Indeed, design directions often only *become* obvious through the hard work of close observation and analysis. This chapter has outlined the first part—what ethnographers call "fieldwork" and we call "field visits." Field visits are labor intensive, but they can help you generate insights that no other technique can reproduce.

The Fieldwork Way

1. *Stay close to the work*. Fieldworkers should strive to stay close to where work takes place and to directly observe people doing that work.
2. *Do not dismiss anything as trivial or boring*. It is important to open one's mind and see, hear, sense, and smell as much as possible and to record your impressions faithfully.
3. *Be an observer and stay out of the way*. Know when to ask questions and when to listen.
4. *Be an apprentice and take a learning stance*. See the natives as teachers. What would you have to learn and be able to do if you were to this job yourself?
5. *There is always something going on*. Pay attention to what's happening around you, even if it doesn't seem relevant.

6. *Reflect on what you have collected*. Resist the urge to just collect more data; instead take time to reflect. A little fieldwork goes a long way.

Adapted from *Teaching Organizational Ethnography*, by Nozomi Ikeya, Erik Vinkhuyzen, Jack Whalen, and Yutaka Yamauchi.