

Ethnography in the Field of Design

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Members of the design profession help develop new products and services of many kinds, and they are centrally concerned with satisfying the needs of users of their products. Ethnography appeals to designers because it provides a window onto the ways consumers interact with products in their everyday lives. The paper provides an overview of this extension of applied anthropology to a new domain. It traces how ethnography became known to designers and the transmission of particular research traditions that have shaped the practice of "ethnography" in the design field. Ethnomethodology, conversation analysis, and activity theory have been prominent theoretical influences. Most data-gathering methods are characterized by the use of videotape. As an example, I describe the research practices of one design firm, formerly known as E-Lab LLC, now part of Sapient Corporation.

Key words: design, consumption, video ethnography, conversation analysis, activity theory, research methods

The application of anthropological methods has recently become strikingly popular in the field of industrial design. In this article, I trace how "ethnography" (as it is always called) came to be adopted by design firms. In part, this is a story of personal contacts and social networks. More importantly, however, it is a genealogy of the transmission of particular kinds of anthropological theories and methods. The design world's adoption of "ethnography" has received considerable attention in the popular business and design presses (see Hafner 1999; Heath 1997; Nussbaum 1997; Posner 1996; Robinson 1994a; Robinson and Nims 1996; Smith 1997; Weise 1999; Wells 1999). But the first major volume on this topic written by and (in part) for anthropologists is appearing only now (Squires and Byrne n.d.). One goal of this article is therefore to inform applied anthropologists of a new trend. Among other things, the development offers employment possibilities for students considering an applied career. As a service to readers who want to educate themselves further, I have included a comprehensive list of references.

"Design" is the field whose members envision and give shape to new, or modified, products and services (Industrial Designers Society of America 1996). Among peers, a design is evaluated according to how well it blends aesthetic beauty

with an elegant functionality and ease of use. Particularly successful examples of this craft include the chairs of Charles and Ray Eames, the newly "streamlined" automobiles of the 1950s, and, more recently, OXO Good Grip kitchen utensils. Designers also regard their work as an act of communication regarding the product's intended use. A successfully designed item is one that is easily adopted by consumers. This may be because the product's use fits with existing behavior patterns or because it signals a new use in a clear and compelling way.

"The user" is a central trope for designers, the focus of their professional attention: identifying and meeting "the user's" needs and wants is the central mission of designers. Of course, this is never a straightforward process. Consumers have complex, multiple needs, which they are not always able to articulate. Also, designers may create new product ideas that satisfy needs consumers did not know they had. The popularity of Post-it notes is an example.

Before ethnography arrived on the scene, the dominant kind of social science designers employed to understand the user was cognitive psychology, in particular human factors research (e.g., Norman 1988). This area of study investigates what kinds of product designs are the easiest to use, the most "natural" for consumers, given the strengths and weaknesses of human information-processing abilities. To give a simple example, how do we know whether to push or pull a door to open it? Some doors are confusing in this regard, but their hardware can be designed to make the answer clear. For instance, a flat bar extending horizontally across the whole door "affords no operations except pushing; it is excellent hardware for a door that must be pushed to be opened" (Norman 1988:11). In this approach to "usability," research is largely restricted to a consideration of what goes on "in the head" of the user. The way product use is embedded in

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larger institutional and cultural contexts is not extensively examined (Robinson 1993).

Another kind of information about consumers that designers regularly use is marketing research. Corporate clients usually share their customer surveys, consumer demographics, and historical records of purchase patterns. Such tools identify large-scale statistical patterns but offer little detail about how product use fits into consumers' everyday practices. These sources also provide few insights about the local cultural models and ideologies that inform consumers' understandings of a product. Focus groups are somewhat more open-ended in this regard; however, they rely on participants' self-reports of their attitudes and practices, a methodology that is notoriously unreliable and incomplete.

Ethnography has been so intuitively appealing to designers (and their clients) because it promises to reveal a whole new dimension of "the user." It investigates, not just what consumers say they do, but what they actually do. From the beginning, ethnographic studies showed major discrepancies between designers' intended uses of their products and consumers' everyday behaviors. Such discoveries had a strong impact on the design field, highlighting the importance of learning about product use "in the wild."¹ Designers also found ethnographic videotape of naturally occurring consumer practices strongly appealing; the profession is visually oriented to begin with, and this medium appeared to provide a transparent window onto a whole new dimension of "the user."

In the hotly contested ethical terrain of anthropology, some critics will undoubtedly stake out the position that working for design firms is questionable, arguing that the field of design primarily exists to promote consumption. After all, corporate clients are willing to pay for design recommendations because they think they will help them sell more of their products. Such a critique does raise important concerns, but it should not be applied in too sweeping a manner. Some products and services are beneficial to consumers. Some are an integral part of their work, so that the question becomes not whether consumers will use that type of item (e.g. a chair), but rather whether they can find one that is well adapted to their work practices. In many situations like these, I regard design work as ethical. However, I would agree that there are also products on the market that do not benefit consumers (e.g., processed foods with little nutritive value). What ethical practice in the field of design requires, therefore, is a careful consideration of which products, industries, and marketing approaches one is willing to work with.

The Field of Design

Industrial design developed out of the industrial revolution and modern mass production methods (Heskett 1980). Many scholars have explored the profound shifts in labor process that accompanied the rise of industrial capitalism (Marx 1967; Braverman 1974). To manufacture items more cheaply, entrepreneurs began to divide up the work of the

relevant crafts professions, assigning one small step in the labor process to each worker in their factories. This division of labor removed much of the creativity from the workers' jobs and meant they could be paid less and controlled more easily by supervisors.

Such a shift in production methods led to a variety of newly formulated jobs. Those of factory worker and manager have probably been explored the most extensively (e.g., Braverman 1974; Burawoy 1979; Edwards 1979). The role of designer, however, also developed as a consequence of this novel division of labor. Under previous systems of craft production, the activities of designing and producing artifacts had usually been carried out by the same individual, as two parts of a single process. As production shifted toward factory methods, the work of designing objects began to develop as a separate role.

The skilful design of the objects a factory produced could play an important role in the venture's success. Manufacturers needed to obtain product designs that met at least two criteria: the objects had to be relatively easy to manufacture; and they had to spark the desire of consumers, since a "swelling flood" of mass-produced objects required a matching rise in consumption (Heskett 1980:7). Indeed, many companies treated the design of their products as a potentially powerful sales tool; an object's form, style, and even its functions could convey rich symbolic messages about its users.

Precursors of industrial design were practiced as early as the late 1700s. For instance, in England, Josiah Wedgwood introduced mass production techniques at his pottery firm by replacing artisans who shaped pieces on a wheel by hand with less skilled workers who simply cast pieces from molds. Wedgwood hired designers to develop the initial prototypes on which the molds were based (Heskett 1980:15-17).

However, industrial design developed into a recognized profession only in the 20th century and primarily in the United States (Heskett 1980:105). The field gained prominence during the depression, when surviving firms faced intense competition for their survival and turned to designers for an extra marketing edge. In the 1930s and 1940s, the "styling departments" of auto manufacturers, for instance, provided the training ground for many designers (Heskett 1980:110). This time period saw the development of design consulting firms in much the form they still maintain today. Individual entrepreneurs who gained prominence would hire others to work under them; this enabled their organization to take on more work, and, if successful, to grow further. Although most firms remained fairly small, with less than 50 employees, a few grew to over a hundred. Most consultancies sought out clients across a wide range of industries, although some specialized in particular product areas.

Today, members of the discipline are usually trained in one of the various schools of design that have mostly emerged since World War II; practitioners usually obtain at least a bachelor's, and often a master's, degree. There are about 60 such schools in the United States (Peterson 1998:145).

Prominent ones include the Institute of Design at the Illinois Institute of Technology, the School of Design at the Rochester Institute of Technology, and Design at Carnegie-Mellon. Each school conceptualizes the field somewhat differently, leading to regional variations in design philosophy and practice. After completing their studies, graduates are employed primarily by design consulting firms, and to a lesser degree by corporations which maintain an in-house design function. Well-known consulting firms include IDEO, Fitch, and frogdesign (Nussbaum 1997). Their clients come from all industries and range from small start-up companies to members of the Fortune 100.

In the contemporary United States, the field of design constitutes an occupational community, "a group of people who consider themselves to be engaged in the same sort of work; whose identity is drawn from the work; who share... perspectives that... extend beyond work related matters; and whose social relationships meld work and leisure" (Van Maanen and Barley 1984:287). The core of the field is a discipline termed "industrial design." Many professionals, however, integrate this specific discipline with several related ones, such as product design, design planning, or interface design. All of these subfields, characterized by blurred, overlapping, and shifting boundaries, together form a coherent whole, labeled simply "design," which constitutes the basic taxonomic level for most of its practitioners. Their main professional association, the Industrial Designers Society of America, had 2,750 members as of 1998 (Maurer and Sheets 1998:716).

In recent years, designers have sought to expand their focus from the products themselves to the marketing of those products and even to the manufacturer's overall business strategy (Nussbaum 1997). For instance, specialists in the area of "communication design" develop materials such as advertisements and brochures that "communicate" the value of a product to potential consumers. More broadly, designers may help client companies develop a particular image to increase brand recognition and brand loyalty among consumers. They may introduce innovations to the company logo, the packaging in which the product is sold, product exhibits, and store layouts.

At some schools, such as the Institute of Design in Chicago, a new specialization called "design planning" has emerged, whose practitioners are trained to consider product development in its most holistic sense. Rather than focusing on individual products, they consider the way a company's products relate to each other and how they fit into the company's overall business strategy. "The aim is to identify strategies for systemic innovations, including new products, services, and systems, that are harder for competitors to replicate because of their complexity and that lead to long-term competitive advantage" (Institute of Design 1999).

Indeed, when I first began to work with designers, I was struck by the way they tended to collapse what to me was an important distinction, namely the difference between new product development and marketing. They had been trained

to include in a single trajectory the entire cycle from a company's establishment of its current business goals to its selection of new product families, to the development of particular products, to the subsequent marketing of these items. For the designers I worked with, this whole sequence told a single story, because design is, at its center, about the communication of a product's use to its users. And the uses of a product—the ways it satisfies needs of potential consumers—should be planned before an item is given concrete shape as part of its manufacturer's overall business strategy. Once these uses have been determined, they shape not only the product itself, but also how it is marketed.

I learned about the design world by working from 1996 to 1997 as a project manager at a firm called E-Lab LLC, located in Chicago. In 1999 this firm was purchased by Sapient Corporation, a large consultancy that helps clients develop their e-business potential. E-Lab became the "Experience Modeling Group" within Sapient. To align with its new parent, the group is presently undergoing shifts in its focus and work practices. Here, I describe only E-Lab as it was organized prior to its purchase by Sapient.

E-Lab was different from other design firms because it was based on an equal partnership between research and design. Researchers and designers were employed in about the same numbers, and each project was staffed and managed by members of both disciplines (Wasson n.d.). In most design firms, researchers play a much smaller role than designers, both in their numbers and in their influence over projects. Another way E-Lab was unique was that from the beginning, ethnographic methods formed the centerpiece of its research approach.

My responsibilities at E-Lab included both managerial and research roles. I acted as team leader for the groups of researchers and designers who collaboratively executed client projects, guided the fieldwork process for these projects, managed client relationships, and helped develop new research methodologies. By engaging in these diverse activities, and working with designers on a daily basis, I was exposed to the panorama of practices and beliefs that constitute the world of design.

A History of Ethnography in Design

Although the field of design has only recently "discovered" ethnography, anthropologists have been looking at related issues for many years. The study of consumption can be traced to Mauss's distinction between gifts and economic exchanges (1990 [1925]). Recently, however, this schema has come under attack. As Appadurai (1986:11) points out, "Gifts, and the spirit of reciprocity, sociability, and spontaneity in which they are typically exchanged, usually are starkly opposed to the profit-oriented, self-centered, and calculated spirit that fires the circulation of commodities." Critics of such oversimplifications call for a more nuanced consideration of the ways gifts can be calculated and commodities can be highly personal. Indeed, the study of consumption

has experienced a renewed focus lately through studies of popular culture and life under late capitalism (Carrier 1994, 1997; de Certeau 1984; Miller 1994, 1997, 1998). Since at least the 1980s, applied anthropologists have consulted on marketing and product development in the private sector (Baba 1986; Barnett 1992; Sherry 1995). But these anthropologists were not integrated into the design community. Their recommendations to corporate clients were summaries of research findings; translating these findings into concrete products was left to the clients.

Prior to the link with anthropology, in the 1980s and early 1990s, several researchers working in the field of design had already initiated studies showing the importance of situating product use in its sociocultural context. The work of these individuals undoubtedly created a more receptive environment for the subsequent wave of ethnographic research. Two researchers who became particularly well known—and are still highly respected—were Jane Fulton Suri at IDEO and Liz Sanders of SonicRim.

Fulton Suri had some training in experimental psychology and received a master's degree in architecture. She began her career at the Institute for Consumer Ergonomics in England in 1979 (Reese n.d.). But early on, she began to expand her focus beyond traditional, human factors-based ergonomic questions. For instance, in an early study on the high accident rate of motorcyclists, she realized that the institute's initial approach of "tackling the problem at the level of putting on lights, and of wearing bright clothing," was inadequate. She expanded the project to include issues of "status, young manhood, and the meaning of clothing in the cultures of motorcycles and adolescence" (quoted in Reese n.d.). In 1987, she went to work for the design firm ID TWO, which merged with IDEO in 1991. There, she gradually "became the person... who knows how to... watch people doing things, and using products, as a way of inspiring design" (quoted in Reese n.d.).

Liz Sanders received a Ph.D. in experimental psychology. In 1982 she joined the firm Richardson/Smith, which was purchased by Fitch in 1988. She remained there until 1999, when she and three other colleagues started their own firm, SonicRim (Reese n.d.). Sanders became "well known as a leader in 'Participatory Design,'" an approach in which potential users were gathered together and given tools that allowed them to construct models of objects that met their "tacit needs" (Reese n.d.). For instance, they might be given a collection of velcro-covered shapes to put together as they wished. This approach gave a greater creative voice to product users than was traditional in the design world.

The concept of ethnography made its way into the field of design through research on computer-supported cooperative work (CSCW). In telling how ethnography became a familiar concept to designers, I trace two interwoven themes: on the one hand, the development of a particular constellation of theoretical and methodological approaches; and on the other, the development of interpersonal networks that connected the fields of anthropology, CSCW, and industrial

design. As with any history—especially such an abbreviated one—I will only highlight a few social actors and narrative strands that I take to be key.

Computer-Supported Cooperative Work (CSCW)

CSCW is the broadly interdisciplinary study of how humans interact with computer software in the workplace. As the program chair of the 1992 CSCW conference noted:

the phrase *Computer Supported Cooperative Work* is a misnomer and implies a more limited field of study than [it actually designates]...the phrase refers to the study of group and organizational work practices and the application of...information technology...to support work, education, and occasionally play in groups varying in size, permanence, and structure (Kraut 1992:1).

The field is a new one, linked to recent technological developments. The biannual American CSCW conference, which played a significant role in coalescing participants into a research community, was first held in 1986.² The CSCW community is primarily made up of social scientists who study technology users and their work practices, computer scientists and application builders who design the systems, and organizational change specialists who guide the changes in work practices that accompany the adoption of new technologies.

Anthropologists have been prominent members of the CSCW community from the start. Their contribution has been to highlight the importance of empirically examining the everyday practices of computer users. Previously, software designers tended to create programs based on their native intuition about how intended users would interact with these programs. "Any system designed for use in the workplace incorporates more and less explicit assumptions about the work that is to be done with it" (Suchman 1995:33). Yet the software designers often used computers differently from nonspecialists. Furthermore, they lacked detailed knowledge of the needs and work practices of the users for whom the technology was intended. Anthropologists showed how ethnographic investigations into the work activities and local knowledge of such communities could help designers of new technologies understand the needs of their users better (Bentley et al. 1992; Blomberg et al. 1993; Hughes et al. 1992; Luff et al. 1992; Suchman and Trigg 1991). The CSCW community was quite receptive, and ethnography quickly gained a high visibility. Consider the following excerpts from conference proceedings:

there has recently been a growing interest in undertaking naturalistic studies of technologically mediated collaborative activity in 'real world' organizational environments (Luff et al. 1992:163).

Ethnography has gained considerable prominence as a technique for informing CSCW systems development (Hughes et al. 1994:429).

Ethnography has obtained a high visibility as a contribution to CSCW (Shapiro 1994:417).

Xerox Palo Alto Research Center (PARC)

Lucy Suchman was the first of a group of anthropologists to work for the Xerox Palo Alto Research Center (PARC) in the 1980s. She and the researchers with whom she collaborated pioneered the use of ethnographic approaches in software design in the United States (Blomberg et al. 1993; Blomberg et al. 1997; Suchman 1987).³ In their studies of how people interact with computers, members of this group were especially influenced by two research paradigms, ethnomethodology and activity theory (cf. Shapiro 1994).⁴

Ethnomethodology, and its methodologically more sophisticated offspring, conversation analysis, are particularly suited to the fine-grained examination of collaborative work activities in that they focus on the immediacies of interpersonal interaction (Garfinkel 1967; Goodwin and Heritage 1990; Sacks et al. 1974). Suchman (1995) suggestively titled a collection of articles on the uses of ethnography in software design "Making Work Visible." She began the introduction with the quote that "how people work is one of the best kept secrets in America," pointing out that this "is particularly remarkable given the large and growing body of literature dedicated to work-flow modeling, business process engineering" and similar change efforts (1995:56). Suchman and her collaborators found that ethnomethodology and conversation analysis were particularly suited to redressing this lack, since they investigate how, at the microlevel, people constitute the social order on a moment-to-moment basis.

An obvious methodological influence from conversation analysis (CA) has been the Xerox PARC practice of using videotape to document ethnographic materials (Blomberg et al. 1993; Brun-Cottan and Wall 1995; Suchman and Trigg 1991). Video has proved useful both for the researchers' own analytic efforts—as a record of interactions that can be subjected to close, repeated scrutiny—and for their ability to communicate insights to system designers. More profoundly, CA and ethnomethodology have provided theoretical tools for Xerox researchers. For instance, they interpret collaborative work behaviors using the fundamental CA principle that interactions are structured as sequences in which each move incorporates the actor's interpretation of the immediately preceding moves. Although Suchman had already brought an interest in ethnomethodology from her dissertation research, the diffusion of these ideas at Xerox PARC was furthered in the early 1990s by a yearlong visit from the eminent anthropologists and conversation analysts Marjorie Harness Goodwin and Charles Goodwin (C. Goodwin 1996; Goodwin and Goodwin 1996; M.H. Goodwin 1995; Suchman 1992, 1996). They in turn invited other CA scholars, such as Emanuel Schegloff, to participate in PARC research efforts.

Activity theory is based on the work of the Russian psychologist Vygotsky (1978), who earlier this century studied how children acquire competence in speaking and other skills. In contrast to Piaget (and the approach to child learning that

subsequently developed in Western psychology), Vygotsky highlighted the importance of the environment in which a child acts. Rather than focusing on children's intrapsychic processes, he considered how older, more experienced people help them learn, and examined objects children use as tools to help them achieve tasks. Vygotsky advocated the holistic examination of "activity systems": the interrelationships among learners, teachers, objects, and any other relevant aspects of the environment.

The anthropologists who began to draw on Vygotsky in the 1980s extended his approach to the study of adult communities. Many examined everyday work practices (Engeström and Middleton 1996a; Lave 1988; Rogoff and Lave 1984; Lave and Wenger 1991; Scribner 1984; Tobach et al. 1997; Wertsch 1985). For instance, Scribner examined occupational tasks at a dairy (1984) and Lave studied grocery-shopping behavior (1988). Like ethnomethodologists and conversation analysts, activity theorists emphasize microlevel examination of interactions. They broaden the focus, however, to include not only human participants, but the roles played by artifacts and the environment in which an engagement takes place. "Dichotomies between instrumental and communicative action are not very useful.... Work practices are mediated by technological artifacts...from notational systems and special vocabularies to machines and buildings" (Engeström and Middleton 1996b:4). The Vygotskian perspective has helped Xerox researchers theorize the role of computer hardware and software in relation to their users. For instance, they have drawn on the notion of "distributed cognition," knowledge that cannot be pinned down in the head of any individual, or in external tools, or the environment, but which instead exists in relations between these elements (Cole and Engeström 1993; Hutchins 1995).

I have described CA and activity theory separately for heuristic purposes, but the researchers at Xerox PARC integrate both approaches in their studies. Indeed, they belong to a broad network of social scientists who look at work and technology practices from a combination of the above theoretical vantage points (Button 1992; Chaiklin and Lave 1993; Drew and Heritage 1992; Engeström and Middleton 1996a; Garfinkel 1986).⁵

The Link with Industrial Design

The initial link between PARC and industrial design was forged in 1991, when a Chicago design firm called Doblin Group was asked by a mutual client, Steelcase, to collaborate with Xerox PARC on part of their "Workplace Project" (Goodwin 1996; Goodwin and Goodwin 1996; Suchman 1992, 1996). Through this project, Doblin's head of research, Rick E. Robinson, met Suchman and other members of her group. As they worked together, he was exposed to the forms of ethnographic research that had evolved at PARC. Robinson realized the potential usefulness of these methods for industrial design and began to incorporate them into Doblin's projects.⁶

In 1994, Robinson left Doblin and founded E-Lab LLC with two other former Doblin employees. From the beginning, they established the principle that *all* of the new firm's design recommendations would be based on ethnographic research (Robinson 1994b; Wasson n.d.). What, precisely, such research consists of has evolved over time. However, E-Lab's overall approach showed clear continuities with Xerox PARC. Methodologically, the most obvious borrowing from PARC was the emphasis on videotaping everyday consumer behavior. In terms of analysis, CA and activity theory strongly influenced E-Lab's approach, as seen in the firm's "AEIOU framework."⁷ This was a heuristic device to help interpret observations; it was used both to code data and to develop the building blocks of the models that would ultimately address the client's issues. As described in materials for potential clients:

One of our principal analytic frameworks for looking at and understanding a situation or context is the AEIOU framework. What is important is not only understanding and describing each element of the framework, but also understanding the interactions between the elements.

- **Activities** are goal directed sets of actions—things which people want to accomplish
- **Environments** include the entire arena where activities take place
- **Interactions** are between a person and someone or something else, and are the building blocks of activities
- **Objects** are building blocks of the environment, key elements sometimes put to complex or unintended uses, changing their function, meaning and context
- **Users** are the consumers, the people providing the behaviors, preferences and needs (E-Lab 1997).⁸

After Robinson left the Doblin Group, the firm hired other researchers to provide expertise in ethnographic methods. The emphasis on ethnography was further spread across Chicago design circles through the Institute of Design, where Robinson taught courses. For these reasons, the approaches to ethnographic research at a number of Chicago design firms, including E-Lab, Doblin, and Design Research Associates, bear a family resemblance to each other.

In the mid-1990s, the use of ethnography in design began to receive publicity in the popular business and design presses, a process actively encouraged by Robinson (Coleman 1996; Hafner 1999; Heath 1997; Nussbaum 1997; Robinson 1993, 1994a, 1994b; Robinson and Nims 1996; Smith 1997; Weise 1999; Wells 1999). E-Lab received a fair amount of media attention; for instance, it was the subject of a feature article in the popular business journal *Fast Company* (Posner 1996). Design firms in other parts of the country, especially California, began to add ethnography to the research methods they claimed to offer in their promotional materials. For instance, GVO, based in Palo Alto, first hired an ethnographer on a consulting basis in 1995, and by 1998 employed two full-time anthropologists. By 1997, every major design firm claimed to include ethnography as one of its approaches.

What is Meant by "Ethnography"?

"Ethnography" has a narrower and somewhat different meaning in the field of design than it does for most anthropologists. In common with other kinds of applied anthropology, research is usually done more quickly, and given less theoretical contextualization, than on academic projects. In addition, however, the data collection methods and ways ethnographic materials are analyzed are shaped by the particular needs of industrial designers. They are also molded by the traditions of CSCW ethnography.

I will use E-Lab's approach as a case study of ethnographic research methods in design firms. Every firm has a somewhat different approach. There tends to be a certain degree of secrecy about research methods, since new ones may temporarily constitute a competitive advantage until other design firms learn about and copy them. E-Lab's approach was continuously evolving, due to the efforts of anthropologist employees to further incorporate their disciplinary expertise into the research process, as well as the creativity of all firm members in developing innovative solutions to particular client problems. Below, I describe only the most common data collection methods from 1996-1997. Readers should expect that E-Lab has expanded and modified its approaches since then. Furthermore, although I discuss each method individually, every project at E-Lab incorporated several methods, used in conjunction with each other.

Data Collection

Participant Observation

Participant observation was the fundamental approach to gaining insights into consumer behavior. It was used to develop understandings both of how people shop and how they use products in their daily life. Researchers might roam the aisles of a grocery store, identifying characteristic browsing behaviors. Or in an office environment, they might sit in the employee cafeteria to observe impromptu meeting patterns. When appropriate, they engaged people in conversation about their activities. Researchers kept fieldnotes and often captured their impressions on videotape as well, via either mounted cameras or handycams (see below). They usually spent between two and five days at each site and generally worked in teams of roughly two to seven individuals. During fieldwork, research teams usually met daily to compare insights and develop initial hypotheses about what they were observing.

Mounted Video Cameras

During participant observation, the eyes of human researchers were often augmented by the lenses of stationary video cameras. I managed one project in which we placed eight cameras in selected parts of an office environment and another project in which we placed seven cameras in a large store. The cameras were kept running during the main hours of activity, usually about eight hours a day. This technique

made it possible to continuously monitor a broad sample of environments and spaces. Since the cameras captured any activities that occurred within the range of their lenses, the resulting video data were often flexible enough to be used for more than one purpose. For instance, a client could ask to have tapes from a previous project reanalyzed with a different question in mind.

Roving Cameras: Desk Tours and Shadowing

Participant observers often carried a handycam with them. Sometimes they would keep the camera going continuously, observing their environment through its eye. At other times they would only record selectively. "Desk tours" were a kind of interview created for fieldwork in office environments, when researchers wanted to learn about how employees' work processes drew on particular artifacts and spaces. The researcher would ask an employee to describe every item in the office or cubicle and might ask for a tour of the rest of the department or work area as well. In the process, the researcher would seek to elicit narratives about the employee's everyday activities. A second kind of roving camera interaction was to "shadow" a particular subject over the course of a workday or a shopping trip. The researcher might solicit explanations of puzzling behaviors at unobtrusive moments.

Store Intercept Interviews

These interviews were used to gain insight into shopping behaviors. They complemented the research technique of mounting stationary video cameras over particular display areas in a store. Fieldworkers would ask shoppers who had selected an item if they would be willing to answer a few questions in exchange for some small compensation. Although these interviews were kept short, they provided researchers with key background information to interpret the shopping behaviors captured by the stationary cameras. These interviews were also captured on camera, often a handycam carried by the interviewer.

In-depth Interviews

These interviews were primarily conducted to learn about product use outside of work settings, and they usually took place in the homes of consumers. Researchers explored the interviewees' practices and cultural models regarding the product being investigated. The conversations were open-ended, but interviewers began with a protocol or list of issues to explore. The boundaries of this protocol were drawn broadly, since a wide range of topics might shape consumers' actions and beliefs. For instance, a snack food might evoke questions on child-parent relationships, parental work practices, the children's activities, shared family activities, grocery-shopping patterns, attitudes toward child rearing, attitudes towards health, diet and exercise, and the family's ethnic background. The goal of the interviewers was to elicit rich, detailed narratives, and one way of stimulating such stories was to ask for a tour of the relevant parts of the home.

For example, seeing the surprising places where a snack food was stored might spark productive exchanges. One function of these interviews was to provide information about behavior that took place in settings where participant observation was not feasible. The conversations were exhaustive and usually lasted several hours. They were recorded using handycams.

Photo Narratives

Consumers were given a disposable camera and asked to take pictures according to a written guide developed for the occasion. In effect, they were asked to document their everyday interactions around the product category being studied. The instructions encouraged them to organize their pictures as a coherent narrative. After the pictures were developed, E-Lab researchers conducted phone interviews to further elicit explanations and stories about the photos. This research technique gave subjects a great deal of control over their self-representation. It revealed some of the personal meanings with which these individuals invested their possessions and permitted comparison of such meanings across a cross section of consumers.

Analysis

In the design world, ethnography is associated more with the collection of data than with their analysis. However, data never speak for themselves, so I include a few brief points about the interpretation process at E-Lab. The bulk of the ethnographic materials that needed to be analyzed and interpreted were in the form of videotape. In addition, researchers reviewed their fieldnotes, the client's marketing data, and other information they might have collected.

Analysis was conducted jointly by the project team, usually consisting of three to seven members. They were taught to build from "instances" of consumer behaviors to "patterns." Team members started by examining ethnographic materials and collecting "instances" they thought might be relevant. E-Lab created a sophisticated software program to capture, annotate, and organize video clips. As instances accumulated, project participants grouped them into patterns. This work process was both individual and collective; team members alternated between watching video on their own and in groups. One of the big advantages of videotape was that it made ethnographic materials easy to share. Team members who had not participated in a particular fieldwork encounter could see it through the eyes of the original observer's handycam. Likewise, project participants could all watch an episode together and contribute their individual perspectives on it. Group meetings were particularly productive occasions for brainstorming ideas.

The goal of data analysis was to develop a model that both interpreted the ethnographic materials that had been collected and envisioned a solution for the client. The model offered a coherent narrative about the world of user-product interactions: how a product was incorporated into consumers'

daily routines and what symbolic meanings it held for them. These insights, in turn, were framed to have clear implications for the client's product development and marketing efforts.

Three groups of people collaborated in the process of data analysis: researchers, designers, and members of the client company. At E-Lab, project teams were supposed to consist of a roughly equal mix of researchers (ethnographers) and designers, all of whom participated in each phase of a project. The partnership between these two professional groups was an ongoing focus of attention (Wasson n.d.). In addition, project leaders planned frequent meetings between their teams and client representatives. Such interactions ensured that a project's emergent analytic directions remained aligned with the client's interests and enabled the team to incorporate insights from client members into their interpretations. These meetings were informal and discussion-oriented; client representatives were usually shown video clips and invited to participate in interpretive brainstorming sessions.

The Value of Ethnography: An Example

As the popularity of ethnography among designers and their clients attests, observations of naturally occurring consumer practices are widely credited with helping manufacturers identify significant new product directions. Concrete examples are tremendously helpful in enabling readers who are unfamiliar with the field of design to gain an understanding of anthropology's potential contributions. At the same time, most clients are unwilling to publicize project results, since the findings constitute an advantage over competitors only as long as they remain secret. However, I can describe some of E-Lab's very early work, since the insights have been incorporated into products by now and no longer constitute the cutting edge in their industry.

One of E-Lab's first (and continuing) clients was Steelcase, a maker of office furniture and environments. Contemporary office settings are often largely constructed from modular pieces. The building architects merely construct cavernous rooms, which must be formed into cubicles, hallways, and other kinds of spaces by mobile partitions. Desks, filing cabinets, tables, and so forth are subsequently attached to those structures. Steelcase manufactures all these pieces, both the wall units and the furniture.

In developing their products, Steelcase designers are guided by their visions of how items will be used. They must imagine how people in office settings go about doing their work. Before E-Lab's research, the designers had a rather simple and static vision of what particular configurations of space meant to their users. For instance, they believed certain kinds of modular constructions would be categorized by their users as individual workspaces, and that ipso facto, those environments would be used for solitary work. Other spatial configurations would be identified as meeting rooms, consequently, they would be used for meetings and so forth. The

designers gave little thought to hallways and other "in between" spaces.

E-Lab's ethnographic studies of office environments revealed a much more complex picture. Workers used spaces in many ways designers had never intended and for multiple purposes. To give just one example, hallways and other "in between" spaces turned out to be highly significant sites of work interactions. This finding had far-reaching design implications for Steelcase. It led the company to focus more on products that could be placed in such "in between" spaces to facilitate employees' interactions. Such products ranged from chairs to whiteboards. This finding has become institutionalized at Steelcase and is almost taken for granted today.

Cheap Hype, Expensive Substance

Although ethnography enjoys a great deal of popularity in the design field at present, I want to close with a cautionary eye to the future. Observing a similar phenomenon in CSCW, Hughes et al. (1994:437) noted: "Ethnography is currently fashionable in CSCW, but if it is to survive this kind of attention then it is important that the method find an effective voice rather than remaining content with ephemeral celebrity."

Due to both client confidentiality principles and the reticence of design firms for whom research methods constitute a competitive edge, it is impossible to know precisely what contributions ethnography has so far made in the field of design. Many project results remain secret. Also, it often takes years before the relative successfulness of new product development efforts can be assessed. The ultimate value of current or recent design projects is therefore not yet known.

Ten years from now, will ethnography be regarded as a short-lived fashion from the turn of the millenium? Its staying power depends on its ability to accurately purvey a unique kind of useful information to designers. And while the details of design firms' ethnographic practices may not be public, there is a widespread sense among anthropologists in the design community that the quality of these firms' research varies widely. The popularity of the approach has led a number of design firms to claim they offer "ethnography" even though none of their employees has a degree in anthropology or a related discipline. Sometimes researchers trained in cognitive psychology adopt observational methods; sometimes designers themselves do the observation. Such design firms are not necessarily averse to hiring anthropologists; they may have been unable to find ones with an adequate knowledge of the private sector.

As a consequence, the concept of ethnography has become a "pale shadow of itself" (Wasson n.d.). In its most emaciated form, the term is simply used to refer to a designer with a video camera. Even in somewhat richer versions, the term has become closely identified with the act of *observing* naturally occurring consumer behaviors. The need

to *analyze* those behaviors and situate them in their cultural context is poorly understood, even though these activities are essential parts of developing a model of user experience that leads to targeted and far-reaching design conclusions. The anthropological apparatus that stands behind ethnography—the self-reflexivity of participant observation, the training in theory that enables fieldworkers to identify patterns—these are poorly understood in the design field. Indeed, the association between ethnography and anthropology is not widely known. The term “anthropology” is almost never heard. Even Chicago’s Institute of Design, whose faculty has a fairly sophisticated understanding of the topic, describes ethnographic observation merely as “a method borrowed from social science research” on its Web site (Institute of Design 1997).

The tendency for design firms to skimp on analysis is due in part to financial pressures. It can be hard to persuade clients to fund adequate labor time for researchers to develop well-grounded interpretations. Merely claiming to do ethnography costs little; actually conducting substantive anthropological research is much more expensive. Clients are also chronically in a hurry and press for immediate results. Nonetheless, my worry is that the design firms that skimp on analysis will tend to produce less interesting results. In the long run, this could lead to the perception that ethnography doesn’t have much to offer after all. If that should happen—and I certainly hope it does not—an opportunity for anthropologists to help construct the world around us will have been lost.

Those of us who are active in the design field can address this issue in several ways. First of all, it is my hope that the mechanism of the market may actually be of use and that anthropologists can create positive publicity for themselves by doing good work on their projects. It seems possible, at least, that clients will realize, over time, that the findings of design firms engaging in richer forms of ethnography outshine the findings of other firms. E-Lab/Sapient’s continued growth is a hopeful sign. In addition, anthropologists can communicate the concerns I have raised here to designers through various public fora. They can write books and articles and speak at design conferences. One edited volume is already underway (Squires and Byrne n.d.).

In conclusion, I would like to note that not only can the field of design benefit from anthropology—the reverse is true as well. The design context has already led to a number of innovations in applied anthropological practice that could be used productively by a wider group of practitioners. For instance, the data analysis process at E-Lab joined together a diverse group of people. Researchers, designers, and members of the client company all participated (Wasson n.d.). One of my reviewers argued that such a three-way collaboration, “even in today’s age, is quite unusual” in bridging both disciplinary and organizational boundaries. Project results were certainly far more robust than they would have been if only one or two of the three groups had been involved.

Furthermore, the practice of videotaping subjects going about their daily interactions could be a helpful analytic tool for many applied anthropologists. One of the advantages it offers is the way it facilitates collaboration between members of a project team. At E-Lab, researchers might conduct observations on their own or in pairs. But by showing the tapes they made to the whole project team, researchers could compare their experiences with each other, designers developed ideas for applications, and members of the client company were able to point out discoveries of particular interest.

This videotaping-collaboration approach can easily be adapted to program planning and evaluation, common activities for applied anthropologists. Indeed, I have my applied anthropology class conduct evaluations of museum exhibits using this approach. Students bring visitors to the museum and videotape them, first as they go through the exhibits and then as they talk about their experiences. The class as a whole watches clips from the tapes and collaboratively develops an analysis and recommendations. Our pro bono client is the Field Museum of Natural History.

Notes

¹I borrow the phrase from Hutchins’s study of Navy navigation teams (1995:xiii); he uses “in the wild” to refer to “naturally occurring culturally constituted human activity” as opposed to laboratory settings.

²A European CSCW conference takes place in the odd years. The CSCW community is highly international, with European members located especially in the U.K. and Scandinavia.

³Another thread that I will not pursue here is the influence of Scandinavian traditions of workplace ethnography. In Scandinavia, longstanding concerns for the dignity and empowerment of workers have resulted in a history of applied anthropological research on the role of new technologies in workplace settings. Such traditions have helped shape more recent movements in the U.S. such as CSCW and the somewhat related participatory design.

⁴The Xerox PARC group was also influenced by a third paradigm, the sociology of science. I will not discuss this field because it had minimal impact on the research approaches developed in the industrial design community.

⁵I should also note that, although these scholars are all committed to a close examination of work activities in situ, they are not all anthropologists; their backgrounds straddle sociology, communications, cognitive science, linguistics, and education.

⁶Since his doctorate was from the University of Chicago’s Committee on Human Development, he had prior exposure to anthropology.

⁷E-Lab’s approach also drew on a number of other research traditions, such as narrative theory and interpretive anthropology.

⁸The AEIOU framework suffers from a number of obvious limitations; it has no place to identify broad cultural patterns and ignores questions of change, history, and political economy. Such an overly exclusive focus on the microlevel was particularly characteristic of E-Lab’s earliest days. By the time I worked there, researchers were developing various ways to incorporate macrolevel issues into their analyses. The AEIOU framework was still used for certain purposes, but its limitations were recognized.

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