
Introduction: To Classify Is Human

In an episode of *The X-Files*, a television show devoted to FBI investigations of the paranormal, federal agents Mulder and Scully investigated a spate of murders of psychics of all stamps: palm readers, astrologers, and so forth. The plot unfolded thusly: The murderer would get his fortune read or astrological chart done, and then brutally slay the fortune-teller. It emerged during the show that the reason for these visits was that he wanted to understand what he was doing and why he was doing it, and he thought psychics could help him understand his urges to kill people. Only one psychic, an insurance salesman with the ability to scry the future, was able to predict his murderous attacks and recognize the criminal. When finally the murderer met this psychic, he burst into his impassioned plea for an explanation of what he was doing. "Why am I compelled to kill all these people," the salesman responded in a world-weary tone such as one might take with a slow child: "Don't you get it, son? You're a homicidal maniac." The maniac was delighted with this insight. He then proceeds to try to kill again. The salesman's answer is both penetrating and banal—what it says about classification systems is the topic of this book. Why is it so funny?

Our lives are hinged round with systems of classification, limned by standard formats, prescriptions, and objects. Enter a modern home and you are surrounded by standards and categories spanning the color of paint on the walls and in the fabric of the furniture, the types of wires strung to appliances, the codes in the building permits allowing the kitchen sink to be properly plumbed and the walls to be adequately fireproofed. Ignore these forms at your peril—as a building owner, be sued by irate tenants; as an inspector, risk malpractice suits denying your proper application of the ideal to the case at hand; as a parent, risk toxic paint threatening your children.

To classify is human. Not all classifications take formal shape or are standardized in commercial and bureaucratic products. We all spend large parts of our days doing classification work, often tacitly, and we

make up and use a range of ad hoc classifications to do so. We sort dirty dishes from clean, white laundry from colorfast, important email to be answered from e-junk. We match the size and type of our car tires to the amount of pressure they should accept. Our desktops are a mute testimony to a kind of muddled folk classification: papers that must be read by yesterday, *but that have been there since last year*; old professional journals that really should be read and even in fact may someday be, *but that have been there since last year*; assorted grant applications, tax forms, various work-related surveys and forms waiting to be filled out for everything from parking spaces to immunizations. These surfaces may be piled with sentimental cards that are already read, *but which cannot yet be thrown out*, alongside reminder notes to send similar cards to parents, sweethearts, or friends for their birthdays, all piled on top of last year's calendar (which—who knows?—may be useful at tax time). Any part of the home, school, or workplace reveals some such system of classification: medications classed as not for children occupy a higher shelf than safer ones; books for reference are shelved close to where we do the Sunday crossword puzzle; door keys are color-coded and stored according to frequency of use.

What sorts of things order these piles, locations, and implicit labels? We have certain knowledge of these intimate spaces, classifications that appear to live partly in our hands—definitely not just in the head or in any formal algorithm. The knowledge about which thing will be useful at any given moment is embodied in a flow of mundane tasks and practices and many varied social roles (child, boss, friend, employee). When we need to put our hands on something, it is there.

Our computer desktops are no less cluttered. Here the electronic equivalent of “not yet ready to throw out” is also well represented. A quick scan of one of the author's desktops reveals eight residual categories represented in the various folders of email and papers: “fun,” “take back to office,” “remember to look up,” “misc.,” “misc. correspondence,” “general web information,” “teaching stuff to do,” and “to do.” We doubt if this is an unusual degree of disarray or an overly prolific use of the “none of the above” category so common to standardized tests and surveys.

These standards and classifications, however imbricated in our lives, are ordinarily invisible. The formal, bureaucratic ones trail behind them the entourage of permits, forms, numerals, and the sometimes-visible work of people who adjust them to make organizations run smoothly. In that sense, they may become more visible, especially when

they break down or become objects of contention. But what *are* these categories? Who makes them, and who may change them? When and why do they become visible? How do they spread? What, for instance, is the relationship among locally generated categories, tailored to the particular space of a bathroom cabinet, and the commodified, elaborate, expensive ones generated by medical diagnoses, government regulatory bodies, and pharmaceutical firms?

Remarkably for such a central part of our lives, we stand for the most part in formal ignorance of the social and moral order created by these invisible, potent entities. Their impact is indisputable, and as Foucault reminds us, inescapable. Try the simple experiment of ignoring your gender classification and use instead whichever toilets are the nearest; try to locate a library book shelved under the wrong Library of Congress catalogue number; stand in the immigration queue at a busy foreign airport without the right passport or arrive without the transformer and the adaptor that translates between electrical standards. The material force of categories appears always and instantly.

At the level of public policy, classifications such as those of regions, activities, and natural resources play an equally important role. Whether or not a region is classified as ecologically important, whether another is zoned industrial or residential come to bear significantly on future economic decisions. The substrate of decision making in this area, while often hotly argued across political camps, is only intermittently visible. Changing such categories, once designated, is usually a cumbersome, bureaucratically fraught process.

For all this importance, classifications and standards occupy a peculiar place in studies of social order. Anthropologists have studied classification as a device for understanding the cultures of others—categories such as the raw and the cooked have been clues to the core organizing principles for colonial Western understandings of “primitive” culture. Some economists have looked at the effects of adopting a standard in those markets where networks and compatibility are crucial. For example, videotape recorders, refrigerators, and personal computer software embody arguably inferior technical standards, but standards that benefited from the timing of their historical entry into the marketplace. Some historians have examined the explosion of natural history and medical classifications in the late nineteenth century, both as a political force and as an organizing rubric for complex bureaucracies. A few sociologists have done detailed studies of individual categories linked with social movements, such as the

diagnosis of homosexuality as an illness and its demedicalization in the wake of gay and lesbian civil rights. Information scientists work every day on the design, delegation, and choice of classification systems and standards, yet few see them as artifacts embodying moral and aesthetic choices that in turn craft people's identities, aspirations, and dignity.¹ Philosophers and statisticians have produced highly formal discussions of classification theory, but few empirical studies of use or impact.

Both within and outside the academy, single categories or classes of categories may also become objects of contention and study. The above-mentioned demedicalization of the category homosexual in the American Psychiatric Association's (APA) *Diagnostic and Statistical Manual 3* (the DSM, a handbook of psychiatric classification) followed direct and vigorous lobbying of the APA by gay and lesbian advocates (Kirk and Kutchins 1992). During this same era, feminists were split on the subject of whether the categories of premenstrual syndrome and postpartum depression would be good or bad for women as they became included in the DSM. Many feminist psychotherapists were engaged in a bitter argument about whether to include these categories. As Ann Figert (1996) relates, they even felt their own identities and professional judgments to be on the line. Allan Young (1995) makes the complicating observation that psychiatrists increasingly use the language of the DSM to communicate with each other and their accounting departments, although they frequently do not believe in the categories they are using.

More recently, as discussed in chapter 6, the option to choose multiple racial categories was introduced as part of the U.S. government's routine data-collection mission, following Statistical Directive 15 in October 1997. The Office of Management and Budget (OMB) issued the directive; conservatively, its implementation will cost several million dollars. One direct consequence is the addition of this option to the U.S. census, an addition that was fraught with political passion. A march on Washington concerning the category took the traditional ultimate avenue of mass protest for American activists. The march was conducted by people who identified themselves as multiracial, and their families and advocates. At the same time, it was vigorously opposed by many African-American and Hispanic civil rights groups (among several others), who saw the option as a "whitewash" against which important ethnic and policy-related distinctions would be lost (Robbin 1998).

Despite the contentiousness of some categories, however, none of the above-named disciplines or social movements has systematically addressed the pragmatics of the invisible forces of categories and standards in the modern built world, especially the modern information technology world. Foucault's (1970; 1982) work comes the closest to a thoroughgoing examination in his arguments that an archaeological dig is necessary to find the origins and consequences of a range of social categories and practices. He focused on the concept of order and its implementation in categorical discourse. The ubiquity described by Foucault appears as an iron cage of bureaucratic discipline against a broad historical landscape. But there is much more to be done, both empirically and theoretically. No one, including Foucault, has systematically tackled the question of how these properties inform social and moral order via the new technological and electronic infrastructures. Few have looked at the creation and maintenance of complex classifications as a kind of work practice, with its attendant financial, skill, and moral dimensions. These are the tasks of this book.

Foucault's practical archaeology is a point of departure for examining several cases of classification, some of which have become formal or standardized, and some of which have not. We have several concerns in this exploration, growing both from the consideration of classification work and its attendant moral dimensions. First, we seek to understand the role of invisibility in the work that classification does in ordering human interaction. We want to understand how these categories are made and kept invisible, and in some cases, we want to challenge the silences surrounding them. In this sense, our job here is to find tools for seeing the invisible, much as Émile Durkheim passionately sought to convince his audience of the material force of the social fact—to see that society was not just an idea—more than 100 years ago (Durkheim 1982).

The book also explores systems of classification as part of the built information environment. Much as a city planner or urban historian would leaf back through highway permits and zoning decisions to tell a city's story, we delve the dusty archives of classification design to understand better how wide-scale classification decisions have been made.

We have a moral and ethical agenda in our querying of these systems. Each standard and each category valorizes some point of view and silences another. This is not inherently a bad thing—indeed it is inescapable. But it *is* an ethical choice, and as such it is dangerous—not

bad, but dangerous. For example, the decision of the U.S. Immigration and Naturalization Service to classify some races and classes as desirable for U.S. residents, and others as not, resulted in a quota system that valued affluent people from northern and western Europe over those (especially the poor) from Africa or South America. The decision to classify students by their standardized achievement and aptitude tests valorizes some kinds of knowledge skills and renders other kinds invisible. Other types of decisions with serious material force may not immediately appear as morally problematic. The collective standardization in the United States on VHS videotapes over Betamax, for instance, may seem ethically neutral. The classification and standardization of types of seed for farming is not obviously fraught with moral weight. But as Busch (1995) and Addelson (1994) argue, such long-term, collective forms of choice are also morally weighted. We² are used to viewing moral choices as individual, as dilemmas, and as rational choices. We have an impoverished vocabulary for collective moral passages, to use Addelson's terminology. For any individual, group or situation, classifications and standards give advantage or they give suffering. Jobs are made and lost; some regions benefit at the expense of others. How these choices are made, and how we may think about that invisible matching process, is at the core of the ethical project of this work.

Working Infrastructures

Sorting Things Out stands at the crossroads of the sociology of knowledge and technology, history, and information science. The categories represented on our desktops and in our medicine cabinets are fairly ad hoc and individual, not even legitimate anthropological folk or ethno classifications. They are not often investigated by information scientists (but see Kwasnik 1988, 1991; Beghtol 1995; Star 1998). But everyone uses and creates them in some form, and they are (increasingly) important in organizing computer-based work. They often have old and deep historical roots. True, personal information managers are designed precisely to make this process transparent, but even with their aid, the problem continues: we still must design or select categories, still enter data, still struggle with things that do not fit. At the same time, we rub these ad hoc classifications against an increasingly elaborate large-scale system of formal categories and standards. Users

of the Internet alone navigate, now fairly seamlessly, more than 200 formally elected Internet standards for information transmission each time they send an email message. If we are to understand larger scale classifications, we also need to understand how desktop classifications link up with those that are formal, standardized, and widespread.

Every link in hypertext creates a category. That is, it reflects some judgment about two or more objects: they are the same, or alike, or functionally linked, or linked as part of an unfolding series. The rummage sale of information on the World Wide Web is overwhelming, and we all agree that finding information is much less of a problem than assessing its quality—the nature of its categorical associations and by whom they are made (Bates, in press). The historical cultural model of social classification research in this book, from desktop to wide-scale infrastructure, is a good one through which to view problems of indexing, tracking, and even compiling bibliographies on the Web. In its cultural and workplace dimensions, it offers insights into the problematics of design of classification systems, and a lens for examining their impact. It looks at these processes as a sort of crafting of treaties. In this, a cross-disciplinary approach is crucial. Any information systems design that neglects use and user semantics is bound for trouble down the line—it will become either oppressive or irrelevant. Information systems mix up the conventional and the formal, the hard technical problems of storage and retrieval with the hard interactional problems of querying and organizing.

Information systems are undergoing rapid change. There is an explosion of information on the Web and associated technologies, and fast moving changes in how information may converge across previously disparate families of technology—for instance, using one's television to retrieve email and browse the Web, using one's Internet connections to make telephone calls. Whatever we write here about the latest electronic developments will be outdated by the time this book sees print, a medium that many would argue is itself anachronistic.

Conventions of use and understandings of the impact of these changes on social organization are slower to come. The following example illustrates the intermingling of the conventional and the local in the types of classificatory links formed by hypertext. A few years ago, our university was in the enviable position of having several job openings in library and information science. Both the authors were on

the search committee. During the process of sifting through applications and finding out more about candidates, the need arose to query something on the candidate's resume. We used the Alta Vista search engine to find the candidate's email address. (Of course, the first thing one really does with Alta Vista is ego surfing—checking one's own name to see how many times it appears on the Web—but we had already done that.) His email address and formal institutional home page appeared in about fifteen seconds on our desktop, but so did his contributions to a discussion on world peace, a feminist bulletin board, and one of the more arcane alt.rec Usenet groups. We found ourselves unable to stop our eyes from roving through the quoted Usenet posts—category boundaries surely never meant to be crossed by a job search committee. Fortunately for us as committee members, we interpreted what we found on the Web as evidence that the applicant was a more well rounded person than his formal CV resume had conveyed. He became a more interesting candidate.

But of course, it might have gone badly for him. In less than a minute we had accessed information about him that crossed a social boundary of *de facto* privacy, access, and awareness context (Glaser and Strauss 1965). The risk of random readership had been there in some sense when he posted to a public space, but who on a search committee in the old days of a couple of years ago could possibly be bothered searching listserv archives? Who would have time? There are many ethical and etiquette-related questions here, of course, with the right to privacy not least among them. The incident also points to the fact that as a culture we have not yet developed conventions of classification for the Web that bear much moral or habitual conviction in daily practice. The label alt.rec does not yet have the reflex power that the label private does on a desk drawer or notebook cover. We would never open someone's desk drawer or diary. We are not usually known to be rude people, but we have not yet developed or absorbed routine similar politeness for things such as powerful Web search engines. We were thus somewhat embarrassed and confused about the morality of mentioning the alt.rec postings to the committee.

As we evolve the classifications of habit—grow common fingertips with respect to linkages and networks—we will be faced with some choices. How standardized will our indexes become? What forms of freedom of association (among people, texts and people, and texts) do we want to preserve and which are no longer useful? Who will decide these matters?