THE PSYCHOPATHOLOGY OF EVERYDAY THINGS

Donald Norman - 1988

Carelman's Coffeepot for Masochists. *The French artist Jacques Carelman in his series of books Catalogue d 'objets introuvables (Catalog of unfindable objects) provides delightful examples of everyday things that are deliberately unworkable, outrageous, or otherwise ill-formed.*

You Would Need an Engineering Degree to Figure This Out

"You would need an engineering degree from MIT to work this," someone once told me, shaking his head in puzzlement over his brand new digital watch. Well, I have an engineering degree from MIT. (Kenneth Olsen has two of them, and he can't figure out a

microwave oven.) Give me a few hours and I can figure out the watch. But why should it take hours? I have talked with many people who can't use all the features of their washing machines or cameras, who can't figure out how to work a sewing machine or a video cassette recorder, who habitually turn on the wrong stove burner.

Why do we put up with the frustrations of everyday objects, with objects that we can't figure out how to use, with those neat plastic- wrapped packages that seem impossible to open, with doors that trap people, with washing machines and dryers that have become too confusing to use, with audio-stereo-television-video-cassette-recorders that claim in their advertisements to do everything, but that make it almost impossible to do anything?

The human mind is exquisitely tailored to make sense of the world. Give it the slightest clue and off it goes, providing explanation, ration- alization, understanding. Consider the objects —books, radios, kitchen appliances, office machines, and light switches—that make up our ev- eryday lives. Well-designed objects are easy to interpret and under- stand. They contain visible clues to their operation. Poorly designed objects can be difficult and frustrating to use. They provide no clues— or sometimes false clues. They trap the user and thwart the normal process of interpretation and understanding. Alas, poor design predominates. The result is a world filled with frustration, with objects that cannot be understood, with devices that lead to error. This book is an attempt to change things.

The Frustrations of Everyday Life

If I were placed in the cockpit of a modern jet airliner, my inability to perform gracefully and smoothly would neither surprise nor bother me. But I shouldn't have trouble with doors and switches, water faucets and stoves. "Doors?" I can hear the reader saying, "you have trouble opening doors?" Yes. I push doors that are meant to be pulled, pull doors that should be pushed, and walk into doors that should be slid. Moreover, I see others having the same troubles—unnecessary trou- bles. There are psychological principles that can be followed to make these things understandable and usable.

Consider the door. There is not much you can do to a door: you can open it or shut it. Suppose you are in an office building, walking down a corridor. You come to a door. In which direction does it open? Should you pull or push, on the left or the right? Maybe the door slides. If so, in which direction? I have seen doors that slide up into the ceiling. A door poses only two essential questions: In which direction does it move? On which side should one work it? The answers should be given by the design, without any need for words or symbols, certainly with- out any need for trial and error.

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The door story illustrates one of the most important principles of design: *visibility*. The correct parts must be visible, and they must con- vey the correct message. With doors that push, the designer must provide signals that naturally indicate where to push. These need not destroy the aesthetics. Put a vertical plate on the side to be pushed, nothing on the other. Or make the supporting pillars visible. The vertical plate and supporting pillars are *natural*

signals, *naturally* inter- preted, without any need to be conscious of them. I call the use of natural signals *natural design* and elaborate on the approach throughout this book.

Visibility problems come in many forms. My friend, trapped be- tween the glass doors, suffered from a lack of clues that would indicate what part of a door should be operated. Other problems concern the *mappings* between what you want to do and what appears to be possible, another topic that will be expanded upon throughout the book. Con- sider one type of slide projector. This projector has a single button to control whether the slide tray moves forward or backward. One button to do two things? What is the mapping? How can you figure out how to control the slides? You can't. Nothing is visible to give the slightest hint. Here is what happened to me in one of the many unfamiliar places I've lectured in during my travels as a professor:

The Leitz slide projector has shown up sev- eral times in my travels. The first time, it led to a rather dramatic incident. A conscientious student was in charge of showing my slides. I started my talk and showed the first slide. When I finished with the first slide and asked for the next, the student carefully pushed the control button and watched in dismay as the tray backed up, slid out of the projector and plopped off the table onto the floor, spilling its entire contents. We had to delay the lecture fifteen minutes while I struggled to reorganize the slides. It wasn't the student's fault. It was the fault of the elegant projector. With only one button to control the slide advance, how could one switch from forward to reverse? Neither of us could figure out how to make the control work.

All during the lecture the slides would sometimes go forward, some- times backward. Afterward, we found the local technician, who ex- plained it to us. A brief push of the button and the slide would go forward, a long push and it would reverse. (Pity the conscientious student who kept pushing it hard—and long—to make sure that the switch was making contact.) What an elegant design. Why, it managed to do two functions with only one button! But how was a first-time user of the projector to know this? go

Taste (7) fur Diawechsel am Gerat

Diawechsel vorwarts = kurz drucken, Diawechsel ruckwartz = langer drucken.

Button (7) for changing the slides

Slide change forward = short press, Slide change backward = longer press.

Leitz Pravodit Slide Projector. *I finally tracked down the instruction manual for that projector. A photo- graph of the projector has its parts numbered. The button for changing slides is number 7. The button itself has no la- bels. Who could discover this operation without the aid of the manual? Here is the entire text related to the button, in the original German and in my English translation.*