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 [taps] 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 troubles. 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 without any need for trial and error.

A friend told me of the time he got trapped in the doorway of a post office in a European city. The entrance was an imposing row of perhaps six glass swinging doors, followed immediately by a second, identical row. That's a standard design: it helps reduce the airflow and thus maintain the indoor temperature of the building.

My friend pushed on the side of one of the leftmost pair of outer doors. It swung inward, and he entered the building. Then before he could get to the next row of doors, he was distracted and turned around for an instant. He didn't realise it at the time, but he had moved slightly to the right. So when he came to the next door and pushed it, nothing happened. 'Hmm,' he thought, 'must be locked'. So he pushed the side of the adjacent door. Nothing. Puzzled, my friend decided to go outside

again. He turned around and pushed against the side of a door. Nothing. He pushed the adjacent door. Nothing. The door he had just entered no longer worked. He turned around once more and tried the inside doors again. Nothing. Concern, then mild panic. He was trapped. Just then, a group of people on the other side of the entranceway (to my friend's right) passed easily through both sets of doors. My friend hurried over to follow their path. How could such a thing happen? A swing door has two sides. One contains the supporting pillar and the hinge, the other is unsupported. To open the door, you must push on the unsupported edge. If you push on the hinge side, nothing happens. In this case, the designer aimed for beauty, not utility. No distracting lines, no visible pillars, no visible hinges. So how can the ordinary user know which side to push on? While distracted, my friend had moved toward the (invisible) supporting pillar, so he was pushing the doors on the hinged side. No wonder nothing happened. Pretty doors. Elegant. Probably won a design prize. The door story illustrates one of the most important principles of design: visibility. The correct parts must be visible, and they must convey 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 interpreted, without any need to be conscious of them. I call the use of natural signals natural design.

[...]

Devices in the home have developed some related problems: functions and more functions, controls and more controls. I do not think that simple home appliances – stoves, washing machines, audio and television sets – should look like Hollywood's idea of a spaceship control room. They already do, much to the consternation of the consumer who, often as not, has lost (or cannot understand) the instruction manual, so – faced with the bewildering array of controls and displays – simply memorises one or two fixed settings to approximate what is desired. The whole purpose of the design is lost.

[…]

The user needs help. Just the right things have to be visible: to indicate what parts operate and how, to indicate how the user is to interact with the device. Visibility indicates the mapping between intended actions and actual operations. Visibility indicates crucial distinctions – so that you can tell salt and pepper shakers apart, for example. And visibility of the effects of the operations tells you if the lights have turned on properly, if the projection screen has lowered to the correct height, or if the refrigerator temperature is adjusted correctly. It is lack of visibility that makes so many computer-controlled devices so difficult to operate. And it is excess of visibility that makes the gadget-ridden, feature-laden modern audio set or video cassette recorder so intimidating.

(Norman, 1998)