Chapter 25

Logic and rationality

People everywhere explain things, and explaining includes notions such as "because" and "therefore"—the notions with which we construct rules of reason. It seems reasonable to me, as it does to Powers, that a capability of controlling perceptions of rules of reason must lie high in the control hierarchies of humankind everywhere. Programs of reason, logic, and rationality are not the only programs controlled at the ninth level, but I will confine this chapter to those topics. I will be writing here from my small fund of knowledge about the forms those mental activities take in contemporary occidental industrial civilization.

Though the sections of this chapter will describe several manifestations of reason, logic, and rationality, my chief purpose in each section will be to enlarge upon four ideas:

1 Though the *capability* of using language in accordance with rules of logic is inborn, the rules to be followed and the skill of doing so are learned. We differ in our skill.
2 Logic and mathematics can be powerful aids in making use of the environment, but their use does not guarantee truth, validity, accuracy, success, appropriateness, or any other good thing. Logic and mathematics must be applied judiciously.
3 Our brains do marvelously well in continuous control of perceived variables, but variables perceived in the present do not foretell what will be perceived in the future. Perceiving the water running into the washbowl does not include a reliable prediction that the water will or will not run over onto the floor. Perceiving the flavors of pecan pie a la mode cannot be counted on to include a perception of a greatly expanded waistline twenty years hence and the probable accompanying ailments. When we in America read that some disease has become epidemic in Africa, that perception does not in itself entail an image of a carrier of that disease boarding an airplane bound for New York.
4 Logic and reason are not the masters of the neural hierarchy. System concepts and principles always override programs. Generations of schoolchildren were fortunate to be reminded by Samuel Butler (1835–1902) that "He that complies against his will/ Is of his own opinion still."

Much of the time, of course, our will is delighted to comply. One way to avoid inner conflict (and feeling bad) is to go by a clear program that has been furnished you (or that you have already built for yourself), taking only those actions provided by the program at each choice-point. When the choices are few, we call that ritualistic behavior. Ecclesiastics are not the only people devoted to ritual. You find ritual wherever you find norms for social behavior. Social ritual provides widely approved (and therefore safe) ways of proceeding. In psychological research, the rituals of established research method are safe; they may not produce reliable knowledge about human functioning, but they are professionally safe.

LOGIC

We humans spend a great part of every day with thoughts of "because" and "therefore"—that is, in reasoning. The extent to which we reason *logically*, however, is my first topic here. I am not going to offer you a short course in logic; I want only to give you a glimpse of what I am talking about when I use the word "logic." You may want to skip this section if you have studied a book on logic. Even a high-school course in demonstrative geometry, if your teacher taught the course as one in formal reasoning, would have acquainted you with what I mean.

am not aware. . .". Not many people, however, want to carry on a conversation like that. Sometimes when I am asked, I say, "Gosh, I don't know." Or, "I think it had something to do with _____, but I feel as if there was another reason in there someplace." That at least enables the other person and me to get on to what we want to do next, which is usually more urgent than thinking up reasons for the past.

Fiction and drama are full of good examples of explaining ourselves. If you want examples from a more scholarly point of view, you might care to look into *Explaining One's Self to Others* by McLaughlin, Cody, and Read (1992).

SUMMARY

In shortened form, I repeat here the four main points of this chapter.

1 We can reap benefits from reason, logic, and mathematics to the extent that we use them skillfully.
2 Logic and mathematics do not fit themselves to every sort of tangible reality. We must ourselves find the fit, if there is one, between what we want to do and the applicable logical or mathematical concepts.
3 Control loops deal with present perceptions. We can make a desired future state more likely if we imagine a feasible future state and feasible present steps toward it.
4 Systems concepts and principles are the final arbiters of the neural hierarchy—not reason and logic.

And I will add a note about the fourth point. No professionals work any more meticulously to avoid slips in logic than mathematicians and theoretical physicists. Yet those thinkers are notable, even notorious, for prizing beauty over stodgy logic in their theories. Time and again, when facing a choice between one path or another in following the implications of their theoretical ideas, they have chosen the one more exquisite. Judging from the elegance I see when I contemplate the sweep of PCT, I think Powers, too, must have made that choice more than once.