

PART I
PURPOSES AND CROSS-PURPOSES
CHAPTER ONE
PURPOSES AND CROSS-PURPOSES OF HUMANS

Imagine that the eye doctor is trying to put drops in your eye but you keep blinking. You insist you don't mean to blink but that no matter how hard you try, when the eye dropper comes too close, your eye just closes. Perhaps unconsciously you don't want that medicine in your eye? What could your underlying motive be?

The Freudian move is a joke, of course. But there does seem to be a sense in which that medicine is not wanted in your eye. We say that the eye "is meant to close automatically" when a foreign object comes too near. The point is to prevent foreign objects from entering it. That is *the purpose* of the eye blink reflex. The difficulty is that you and your eye, or you and your eye blink reflex, are at cross-purposes. You are trying to let the drops in but the reflex's purpose is to keep them out.

Maybe you will object that only one of these crossing purposes is a real purpose. The other is a "purpose" not literally but only by analogy or metaphorically. The real purpose is the conscious human intention not to blink. Only the intention not to blink is a purpose of the whole person, rather than merely a "subpersonal" purpose. The purpose of the eye-blink reflex is only a "subpersonal" or a "biological" purpose and these are only metaphorically purposes.

I am going to try to dissuade you of that. I will try to persuade you that no interesting theoretical line can be drawn between these two kinds of purposes. Purposes of the whole person are made up out of intertwined purposes at "lower" or more "biological" levels.

In elementary psychology classes students are sometimes given this as a homework assignment: For the next few days, every time you and your roommate are talking together, smile whenever your roommate blinks. When successfully performed, the experiment brings home to the student the power of operant (instrumental) conditioning, even in humans. For the roommate soon begins to blink more frequently, yet will be unaware of this, and certainly completely unaware of the *reason*. The purpose of the blinking is to collect smiles. This is known to the student trainer, of course, but not to the blinker. Now ask yourself, where is this purpose resident? The idea that this purpose was, for some reason, "repressed" would surely be ridiculous. But if this purpose isn't the blinker's purpose then whose purpose is it? Is it only a "biological" purpose, like that of the protective eye blink reflex? Suppose that the student trainer casually mentions the frequent blinking to the roommate. The roommate will find it difficult to stop. Are these crossing purposes --the purpose of the blinker to stop blinking and the purpose of the blink to bring in smiles-- both real purposes, or is one of them a purpose only metaphorically?

Some facial gestures are invariant in meaning across cultures. Smiling is one, frowning in anger is another, and apparently raising one's eyebrows is a third (Ekman 1980). Suppose that raising one's eyebrows, like various animal signals such as the cat's arched back or the frog's mating call, is an adaptation, a product of natural selection, selected for serving a particular sort of communicative function. Comprehension of its meaning by observers will have been selected for too. That this is the case with smiling and angry frowning, at least, is not in doubt. Indeed, half of the muscles used in a real, heartfelt smile are involuntary (Damasio 1994). But raising

one's eyebrows, like breathing, is also under conscious control. Probably the biological purpose of raising the eyebrows and the eyebrow-raiser's purpose when purposefully raising the eyebrows usually coincide or overlap. Probably they don't, anyway, typically cross. But why is it so hard to say exactly what you communicate with a raise of the eyebrows, or with a smile? Do you really know, articulately, what you intend to convey when you raise your eyebrows? Does the child know, or the man on the street? If you can't say, off hand, exactly what function the raising your eyebrows has (try it!) --as you can say off hand exactly why you utter "please pass the salt" when you do, and you can also say why you were trying not to blink at the eye doctors-- is it possible that the raised eyebrows' purpose, even when the eyebrows are purposefully raised, really is not a fully conscious purpose? But again, knowledge of the raised eyebrows' purpose surely has not been repressed! (It is not just like an explicit conscious purpose except that it's gone underground.) So if you don't fully understand the function of raising your eyebrows, is its purpose entirely real? Or is it purposeful only in a metaphorical way?

Raising one's eyebrows may not be the clearest example here. So consider instead greeting rituals. It may be that all mammals perform greeting rituals, certainly, for example, dogs, cats, mice, sea otters, and at least some whole communities of killer whales do. The phenomenon of greeting is so common across diverse animal species that, despite debate about just what the function of greetings is, no student of animal behavior doubts that greeting rituals have a function, a survival value. We humans, on the other hand, are not born with ready-made natural ways of greeting. Greetings are done different ways in different cultures. There are various verbal formulas and various hand gestures, head gestures, and so forth. There is curtsying and bowing, hand shaking, kissing on one or both cheeks, breath sniffing, and so forth. These rituals do not have biological functions in the sense of particular genes having been selected for producing them. Presumably, however, they have been selected for culturally. Their continued reproduction, paired with reproduction of the psychological responses of those receiving the greetings, is accounted for by some function they are serving. There is some effect that loops back to encourage continued reproduction of both the particular forms of greeting used in a particular culture and the standard responses to them. There is some cultural purpose that they serve. They are also under conscious control. But *can you describe the purpose* of greeting off hand? Are you aware whenever you greet someone what that purpose is, as you are aware of the purpose when you ask for the salt? You know that it's impolite not to give a greeting and you want to be polite. But why is it polite in every society to give some sort greeting? What's the purpose? Clearly there is some purpose that our greetings have over and above just what you and I consciously intend them to have. Again we can ask, is the sense in which greetings themselves have a "purpose" a real purpose or a purpose only metaphorically speaking?

It is clear what the biological purpose of a taste for sweet things is. A sweet taste is a natural attractor or reinforcer designed to increase behavior that leads to the intake of high calorie foods. Although the genes are responsible for the fact that sweets (also that smiles) will reinforce human behaviors, the purpose of the conditioned behaviors themselves is not the same, of course, as that of the genes. Conditioned behaviors have been selected for on their own level, selected for bringing in their own designated rewards, in this case, for bringing sweet tastes into the mouth. On this level, for example, the purpose of behaviors conditioned by sweets is served by foods containing saccharin. Moreover, many foods high in calories don't serve these purposes.¹ Further,

granted that people don't have inborn concepts, in humans a taste for sweets often brings in sweets, not as a result of automatic operant conditioning, but by a person's having learned from experience that they like sweets, and having consequently formed a conscious psychological goal --another level of purpose-- of obtaining and eating sweet foods. Still, a taste for sweets can also work prior to, and perhaps also after, "sweet" is conceptualized, by reinforcing behaviors directly, as smiles can reinforce eye blinks. Psychological purposes induced by acquaintance with sweet things are entirely different from their underlying biological purpose. A desire for sweets is not a desire for calories any more than reinforcement by sweets is reinforcement by calories. It is merely a desire for or reinforcement by sweet tastes, which happen to have been strongly correlated with calories in the historic environment of humans. Similarly, although pain avoidance has tissue-damage avoidance as a biological purpose, the desire to relieve pain is not a desire to relieve tissue damage. In the contemporary context, of course, obtaining more calories is not always a good means to the further biological purposes of increased energy and health. Thus both the conscious and the unconscious (the conditioned) *psychological* purposes of obtaining sweets may cross purposes with their own deeper biological purposes.

Of course, most conscious psychological purposes of humans are not immediately rooted in original attractions and aversions such as the attraction to sweets or to smiles or, say, the aversion to pain. Most conscious psychological purposes are highly derived, distantly rooted in a variety of more original attractions and aversions, mediated by a vast number of beliefs, true or false, about causes and effects and about other aspects of the environment. Thus it may happen that a modern person realizes what the usual source of sweetness is (sugars), realizes what the effects may be of indulging a taste for sweets (getting fat), and thus acquires the avoidance of sweets as a rational conscious purpose. It can happen that the last thing you rationally want is more calories, and yet that you still crave sweets. This sort of inner crossing of purposes is all too familiar, of course. It has been discussed at length by both ancient and modern philosophers under the name of *weakness of will* or *akrasia*. Purposes produced circuitously by pale thought do not necessarily win over purposes derived through more biologically ancient and direct routes. Indeed, perhaps there is a good reason for this. "Doing what comes naturally" is not necessarily good for you, but then neither is doing what reason and/or culture currently happen to dictate. (Consider, in biological context, the highly derived goal of celibacy. Consider the history of medicine: Bishop Berkeley's recommendation of tar water as a cure for all ills; forcing the boys at Eaton to smoke tobacco in order to prevent plague.)

Could sweets operating as an unconscious reinforcer directly conflict with an explicit desire to avoid sweets? Certainly one can absently eat "too many cookies" while engrossed in conversation, whereas one would be unlikely to eat too many of something one didn't like. Returning again to our original question, if this sort of conflict can occur between explicit desire and conditioned response, is the conflict here between two genuine purposes, or is the more subversive purpose, the procurement of cookies hence sweet tastes, a purpose only analogically? Does the answer to this question depend, perhaps, on whether the Skinnerian or the Freudian is right about the status of motives such as the nonconscious cookie-eating motive --or, taking a different example, about why Hans is attracted to a woman who is so much like his mother? If Skinner is right, these motives are biological hence only analogical purposes; if Freud is right they are psychological hence real purposes. Is that how it goes?

Do you still think there is a clean divide somewhere between real and merely metaphorical or biological purposes? Then which of these are governed by real purposes and which are not? Which are purposes of the whole person and which only "subpersonal" purposes?

- Pushing the snooze button on the alarm without waking up.
- Fearfully retreating from a harmless snake, or from the fence at the edge of a precipice, despite knowing there is no real danger,
- Gently applying the brake to negotiate a curve while completely absorbed in a conversation.
- Swinging your left foot forward on your way to answering the telephone.
- Swinging your left foot forward while walking when your attention has just been drawn to this motion.

Suppose that you are having trouble sleeping, and suddenly become super aware of your breathing. Does the purpose of your breathing suddenly shift from being a biological purpose to being a psychological purpose? Does it suddenly shift from being a "subpersonal" purpose to being a purpose of your whole self? Suppose that the awareness of your breathing contributes to keeping you awake, and you make every effort to breathe naturally. Now can you say, about each breath, whether it is taken purposefully in the literal sense or purposefully only metaphorically? It is not possible, I believe, to draw a principled line between real purposes and merely metaphorical purposes, or between people's purposes and merely biological or "natural" purposes, or between purposes of the whole person and subpersonal purposes, purposes of a person's parts.

The purposes that at first seem farthest removed from mere biological purposes are explicit human goals, desires and intentions. These are different in part because they are mentally represented purposes. They represent the conditions of their own fulfillment. But, of course, mental representations couldn't represent their own purposes unless they had purposes to represent, and these purposes are derived from various levels of selection. Explicit desires and intentions are mental representations whose purposes are to help to produce what they represent. They were selected for helping to bring about the conditions they represent.²

They were not selected for one by one, of course, certainly not on the level of genetic evolution. Only the cognitive and conative mechanisms responsible for forming desires and intentions were designed/chosen by natural selection. They were selected for their capacity, on the basis of experience, to form representations of goals, of possible future states of affairs, which when brought about, sometimes furthered our biological interests. The job that these representations did, in turn, was to serve as blueprints, guiding the causal processes by which behaviors that brought about the represented states of affairs were constructed. Compare the design of a camera or of a calculator. The camera is not designed, specifically, to take any particular picture that it takes, nor is the calculator designed, specifically, to make one particular calculation rather than another. Still, when the camera is working right, it was designed to turn out each picture that it turns out, given its input. And the calculator that is working right gives each individual result in accordance with design, again, depending on its input. An explicit intention does what intentions were designed to do when it initiates its own fulfillment. Exactly similarly, a desire does what desires were selected for doing when it is eventually transformed

into a fulfilled intention. Of course the majority of our desires may never be fulfilled. Desires very often conflict with one another as well as with purposes on more primitive levels. And often we can come up with no means of fulfilling our desires. Similarly, most pounces of the cat may miss the mouse. Lots of things fail to serve their biological or natural functions more often than they succeed. The point is that the capacity to develop and to act on desires would seem to have been selected for only because desires are sometimes fulfilled and, of course, sometimes do represent means to fulfillment of our biological interests.

The purpose that is an intention is clearly a purpose of the whole person who has that intention. When you have an intention to do something it is your purpose to do it. So, you may suppose, it is not merely a purpose of some part or aspect of your self. Yet looked at another way, to talk about your explicit purposes, your intentions, is merely another way of talking about the natural purposes of your represented intentions themselves. They have natural purposes just as do many other parts of your self such as your heart and your eyes and the nerve connections responsible for your reflexes, your conditioned responses and your taste for sweets. And turning the coin over again, the purposes of these other parts and aspects of you are as much purposes of yours as are the purposes of your explicit intentions. After all, what you are is the sum and interaction of all the various parts and aspects of your self, and vice versa. So of course all these purposes are your purposes, and vice versa. Looked at critically, the distinction between whole person purposes and subpersonal purposes collapses.

Explicit goals, desires and intentions may seem very different from other purposes because we are "aware" of them. We are aware of what we are doing when we act on our desires and intentions. We can introspect, and say what our desires and intentions are, while introspection will not reveal the purpose of our eye blink reflex or of our hearts' beating nor will it reveal to the roommate the purpose of his blinks.³ But lack of awareness of an action does not affect its purposiveness. This has long been recognized by psychiatrists and hypnotists. One can certainly have purposes that are one's own purposes but that are hidden from one's introspective view. Taking a very different kind of example, consider what it is that happens if you suddenly become aware of each breath you are taking, or of the steps you are taking on the way to answering the telephone. Surely these do not suddenly become purposive activities or purposes of your whole person whereas before they were not. If you suddenly awake from deep thought while you are driving and notice where you are and what you are doing for the first time in ten minutes or so, surely your driving does not suddenly turn into a purposive activity for the first time or into an activity of your whole person when it was not before. According to the social psychologist John Bargh, "our psychological reactions from moment to moment " are "99 and 44/100% automatic" (1997, p. 243-4). Surely this does not mean that only 66/100% of our reactions are purposive! That adult humans typically have the capacity to discern and to think about their own intentions is certainly interesting and certainly requires explanation, but very young children don't have this capacity. They do not even acquire concepts of beliefs and intentions until they are three or four. Surely they perform many intentional acts long before that.

Though no more our purposes than are the purposes of any of our other aspects, consciously represented purposes result from a higher level of selection than do the purposes of our genes and the purposes of conditioned behaviors. As Popper, Dennett and many others have

noted, on this level, experimental thought attempts to reach consciously projected goals by trial and error. Based on our past experience, we think through the consequences of various courses of action, one after another until we find a plan that seems to work. Then we form an explicit intention, which, when the behavioral systems function properly in the right supporting environment, initiates its own fulfillment. The most basic capacities that allow for this, by supporting our capacities to develop concepts, to collect information and so forth are, of course, built in by our genes. But the resulting behaviors have not been selected for by the genes. The behaviors selected in this way have as their purpose to achieve the projected goals for which they were selected. But suppose that we now ask: what determines which conscious goals are projected? Whose goals are these? What mechanism has selected these goals?

My plan to buy donuts and milk on the way home from work may at first seem, clearly, to express a human purpose, whereas the reflex eye blink that prevents a sand grain from entering my eye seems to express merely a biological purpose, a purpose derived only from a history of natural selection. But explicit goals and intentions emerge out of a sea of more primitive behavior controls, and the details of the execution of explicit goals are again submerged. The explicit intention to buy donuts emerges from a primitive attraction to sweet tastes, designed to motivate my indulgence in high-calorie foods. The explicit intention to buy milk may have emerged from a history of reinforcement by smiles when I drank my milk as a child. And as I retrieve my donut from the package, convey it to my mouth and chew, each minute adjustment of the fingers, hand, tongue, and jaw has a definite purpose, though I am not conscious of most of these motions. Indeed, I am quite incapable of becoming explicitly aware of most of them, let alone of their individual purposes.

Clearly we don't aim just for what our genes aim for. Our original conscious goals are not merely to survive and to have lots of children. An easy assumption would be that what we originally aim for, or away from, with our calculated behaviors is just whatever reinforces us, positively or negatively, and that we then aim for whatever we have calculated to be means to those original ends. This is the answer suggested by much classical 20th Century motivational psychology. But I think this is almost certainly mistaken. There is a large gap between possessing a mechanism that reinforces behaviors that lead to certain reinforcing internal states, sensations, perceptions, and so forth, and understanding what those reinforcers are. Surely we are not born with the ability to think thoughts of sweet tastes or of food, of water or of other classical "primary reinforcers." Often we may know when we are attracted or repulsed, but knowing exactly why we are attracted or repulsed is another matter entirely. Knowing exactly what it is that we want, or why, is not automatic. Likely we only find this out by experience, indeed, by something analogous to hypothesis formation and testing. "There is something about him that I don't like," we say, or "For some reason, huge supermarkets make me very anxious," or "I don't know what it is about her that attracts me so."--these are common kinds of reactions. But if it is true that we don't always know what will satisfy us, what will repel us and so forth, then here is yet another opportunity for mismatches among our purposes. Moreover, knowing what it is that attracts us or repels us need not lead to a reasoned desire for or against that thing. Conflicting interests often appear on the same level as well as on different levels.

In Chapter Seventeen, I will argue that there may also be another level of selection behind

human purposes which falls between the selection that is conditioning and the selection that is trial and error in thought. If you watch a squirrel trying to get to a well armored bird feeder, for example, you will witness another level at work. The squirrel is not on the conceptual level I have just been discussing. It does not conceptualize its purpose, make inferences, or that I am pretty sure. But it studies the perceptual situation at length, from first one angle, then another, walking from one side to the other, climbing up a little here and there, experimenting until it "sees" a way it might try to get up. It experiments until it "sees" a Gibsonian affordance. We often do the same kind of thing. While on a rather steep hike, while still completely engrossed in conversation, you may hesitate for a second or two as you examine the best way to get a leg up to the next level, or mentally experiment with which stones in which order to step on to get safely across a stream. This is not conceptual thought, but a sort of trial and error on the perceptual level, yielding purposive behaviors on yet another level of selection.

In sum, if we look at the whole human person in the light of our history of evolution by natural selection, minding the continuities between humans and other animals, it appears that all levels of purpose have their origin in adaptation by some form of selection. In this sense all purposes are "natural purposes". Even though there are, of course, many important differences among these kinds of purposes, there is an univocal sense of "purposes" in which they are all exactly the same.

One more kind of purpose that is derived from natural selection though not from a separate level of selection are the purposes of artifacts. The purposes of many artifacts are derived directly from the purposes their producers had in producing them. Spider webs and Beaver dams, for example, result from the operation of inner mechanisms in the spider or beaver which produce behavioral dispositions that result in the construction of the webs or dams. These producing mechanisms were designed pretty directly by natural selection. The purposes of these artifacts are derived from the purposes of the genes that were selected for producing them. The webs and dams themselves are what Dawkins (1983) termed "extended phenotypes" and the purposes of these webs and dams are likewise extended purposes of the inner mechanisms, and prior to that, purposes of the genes that built the mechanisms. Artifacts made by people are "meant" to do things by the people who make them. If people's purposes are a form of natural purposes, derived from the selection of genes and the selection processes producing conditioned behaviors and rational selection of means to ends, then the purposes of these artifacts are also derived from natural selection. So the purposes of genes, of unlearned behaviors (smiling), of learned behaviors, of conscious intentional actions, of at least some cultural products (greeting rituals), and of artifacts are all purposes in exactly the same sense of "purpose." In all cases the thing's purpose is, in one way or another, what it was selected for doing. Moreover, the purposes we attribute to whole persons, rather than just to various of their aspects or parts, are composed of no more than the purposes of these parts and aspects, and of the way these have been designed to work together.

Notice that this result has not been gained by the method of conceptual analysis. Putting ordinary language and ordinary ways of thinking aside, I have tried to find what is actually in common, according to modern empirical theory, among various kinds of purposes. I have tried to describe the common underlying pattern beneath the surface features that we recognize as marks of purposiveness across a variety of domains. If you feel that I am using the term "purpose" not in

its usual but in some technical sense, I have no interest in arguing the point. My interest lies only in revealing what I take to be an important sort of commonness among the various phenomena that we think of as purposive. And it lies in trying to dissolve the common view that there is some sort of great cleavage between real purposes, purposes of the whole person --MY purposes-- and the purposes of less sophisticated things, including parts and aspects of the whole me.

FOOTNOTES

1. On the remarkably strict analogy between genetic selection and the selection of behaviors by operant conditioning, see (Hull, Langman and Glenn 2001).

2. Claims have been made that the mechanisms currently accounting for human thought may not have resulted from natural selection. Perhaps they appeared on the scene quite accidentally. Most recently, Jerry Fodor (2001), following Chomsky, who seems to be following such figures as Lewontin (1978), Gould and Lewontin (1979), Gould and Vrba (1982) and Gould (1991), argues against the idea that human cognition is an adaptation as follows:

What matters to the plausibility that the architecture of our minds is an adaptation is how much genotypic alteration would have been required for it to evolve from the mind of the nearest ancestral ape whose cognitive architecture was different from ours. (Fodor 2000, p.88)...If changing the physiology a little makes a very large change in fitness, the difference between a selection theory and a saltation theory disappears...Nothing we know about how cognitive structure supervenes

on neural structure impugns the possibility that quite small variations in the latter may produce very large reorganizations in the former. Well, likewise, nothing impugns the idea that quite small changes in a creature's cognitive structure may produce very large changes in its cognitive capacity" (p. 89-90)

And how does Fodor suppose that that very small genetic change in one of our lucky ancestors just happened to get handed down to all the rest of us? The job of natural selection is never, strictly speaking, design. What natural selection does is only to weed out the creatures that are less fit. If there is a good thing going, like, for example, the turtles, who have not changed in nearly 300 Million years, natural selection has remained very busy all that time maintaining the status quo. Its job is to throw away the trash that would otherwise accumulate, not to make changes. The notion that the current human brain was not selected for is patently absurd. That it was selected for is what happened to the various earlier now extinct species of the genus Homo. (It is also what happened to the Neanderthals.) Similarly, the common notion that making reference to natural selection is making

reference to ancient history is badly mistaken.
Possibly our brains arrived in paleolithic times or
before. But they have managed to proliferate
considerably in very recent years, to the detriment, of
course, of many other species. They have been selected
for.

3. Thanks to Sarah Buss for pointing out to me the need
for this paragraph.