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SELF-PERCEPTION AND SELF-KNOWLEDGE[1]

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If we are in search of the self, we can look either inward or outward. To look inward is to focus on mental representations, on the self-concept, or inner experience. To look outward is to see the self as embedded in its environment, ecologically and socially situated in relation to other objects and persons.

These are not exclusive modes: people learn about themselves in both of these ways. As human beings we have many ways of knowing – ecological perception, social perception, memory, verbal instruction, conception and reflection, introspective awareness – and they all inform us about ourselves as well as about the surrounding world. But these many sources of knowledge have not all received equal scrutiny, or equal respect, from philosophers and psychologists concerned with the self. Almost all of those thinkers – from Descartes and Hume through William James and George Herbert Mead to the current crop of computer-mesmerized cognitive-science-oriented mentalists – have looked primarily inward. They have tried hard to find the self in the head. The results have been disturbing: the harder they look, the less self they find. Dan Dennett, one of the most articulate of the current crop of mentalists, puts it this way:

> »Searching for the self can be somewhat like [this]. You enter the brain through the eye, march up the optic nerve, round and round in the cortex, looking behind every neuron, and then, before you know it, you emerge into daylight on the spike of a motor nerve impulse, scratching your head and wondering where the self is« (1991, p. 355).

Dennett's reflections eventually bring him to the conclusion that there is no self at all; it is only a »narrative fiction«. That shouldn't surprise us: Hume had reached a similar conclusion two hundred years earlier in much the same way. It is the inevitable result of looking for the self only inside the head. Fortunately there is another place to look: outwards. Each of us is embedded in a real ecological and social environment, and we can directly see that this is the case. In this sense, we are *ecological* selves (Neisser, 1988; 1991).

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This approach – the definition of self in terms of one's real existence in the world – has its own philosophical roots. Merleau-Ponty and Heidegger come immediately to mind, and Martin Buber has made a particularly salient contribution that I will try to describe later on. But I myself am only a psychologist, not a philosopher; my roots are in the scientific study of perception. When I argue that the self can be directly perceived, my claim is based on an analysis of the actually available information and on experiments showing how that information is used. That analysis reveal the existence of two basic modes of self-perception, which I shall call the *ecological* and the *interpersonal.* Available from earliest infancy, these modes are the foundation on which other forms of self-knowledge are built (Neisser, 1993).

Self-perception is such an unfamiliar concept that you may misunderstand me. Your first association may be to the act of looking in a mirror, which is not at all what I have in mind. No mirror is necessary. We all perceive ourselves continuously, easily, and veridically without one. Although there are theorists who take recognition of the mirror image as the first step in self-awareness, I think they are mistaken. It is actually a rather late step, one that depends on previously established ecological and interpersonal self-perception. But to make that argument, I must first review some general characteristics of visual perception.

The ecological analysis of perception is that I will present today is based on the work of the American psychologist James J. Gibson, my friend and colleague at Cornell University for a number of years. Gibson's approach is radically different from the familiar classical account of vision. It does not even begin with that textbook commonplace, the image on the retina. We must begin instead with the ocean of structured light in which all visual animals live and move, which Gibson (1979) called the *optic array.* Every point to which an eye might come – like this point here at the end of my finger – is already being reached from all directions by light. With a few exceptions (such as the sky) that light has been reflected from environmental surfaces. We can think of the point as surrounded by a spherical shell of incoming optical structure. The exact configuration of that structure depends on the layout of surfaces in the local environment, and hence provides information about that environment.

In the static case, we can consider the optic array as the infinite set of such points together with their shells of informative structure. Still more informative, however, is what happens when the point of observation is allowed to move. Movement-produced changes of the array, collectively known as *optic flow,* uniquely specify both the layout of the environment and the perceiver's own path of motion. It is because we are animals in motion, because we are not limited to single points of observation, that we can see the environment as it really is. As we do so, we necessarily see our own path of motion as well. As Gibson puts it: »Egoreception accompanies exteroception like the two sides of a coin ... One perceives

the environment and coperceives oneself« (1979, p. 126).

In fact, there are several different kinds of optic flow. One case arises when you move parallel to any large surface, such as a wall. In this case, every contour and texture element in the corresponding sector of the optic array streams backward as you move. Under natural conditions, parallel flow is 100% reliable information for motion of the self. For that reason, it can easily be used to produce illusions of self-motion, as in the so-called »moving room« experiments. If you stand on the (motionless) floor of David Lee's moving room in Edinburgh while the surrounding walls move quietly back and forth, you will sway in gentle synchrony with them yourself. With larger optical displacements you will have a compelling experience of moving although you are actually standing still; you may have trouble keeping your balance (Lishman & Lee, 1973). This effect also occurs in the familiar »railroad illusion,« when the train on the next tracks begins to move.

Another important kind of motion-produced information is *occlusion* (Gibson, 1979). As you move forward, the direction of your line of sight toward any stable object (except one exactly straight ahead) must change. Often, objects that are fully visible from one position may be shifted behind other (»occluding«) objects during the course of the motion. This precisely specifies the relative positions of the objects with respect to the self: the occluded one is always farther away than the one which hides it. Even without actual occlusion, the changing visual direction of various objects specify your own path of motion precisely.

A third form of optic flow, »looming« (Schiff, 1965) occurs when objects move toward you. The sector of the array corresponding to the object gets larger and larger, until just before contact it fills the whole visual field. The *rate* of this magnification is especially informative. The inverse of the rate (Lee, 1980) specifies how much time remains before the collision (that is, if there is no change in velocity). Thus your position and movement are specified not only as they are in the present but in the immediate future as well.

All these forms of optical flow enable you to see your own position and movement in the environment. That is, they specify what I call the ecological self. That self does not always correspond to the biological body. Anything that moves with the body tends to be perceived as part of the self, especially if its motions are self-produced. This principle applies to the clothes we wear: it is I who kick the soccer ball, even though its only contact is with my shoe. This principle explains why the wearers of artificial limbs so naturally think of the limb as part of the self. To the extent that the motion of a limb – or anything else – is responsive to one's intentions and coordinated with shifts of the point of observation, it is part of the ecological self as perceived.

One surprising piece of evidence for this hypothesis comes from a familiar bit of behavior in young children, one that has often been descri-

bed but almost equally often misunderstood. In a game-like situation, young children may cover their own eyes with their hands and say »You can't see me!« Until recently, this behavior was usually interpreted as evidence for the irrational egocentricity of children: since the child can't see anything, he assumes that you can't see anything either. But when the American developmental psychologist John Flavell and his associates studied this phenomenon experimentally, they obtained a remarkable result (Flavell, Shipstead & Croft, 1980). When they asked their eyes-covered subjects »Can I see you ?«, most two- or three-year-old children did indeed answer *No.* Surprisingly, however, the same subjects answered *Yes* to many other questions about what the experimenter could see. »Can I see Snoopy (a nearly doll)?« *Yes.* »Can I see your leg?« *Yes.* »Your head?« *Yes.* »Can I see you?« *No.* These results show that the child's »You can't see me« does not reflect any egocentric misunderstanding of other people's vision. Rather, it is a clue to the speaker's own conception of the self. The child's »me« is evidently somewhere near the eyes: when my eyes are covered, you can't see me. The implication seems clear enough. Children locate the self at or near the point of observation, as specified by the field of optic flow.

Vision is the best source of information for the ecological self in *homo sapiens,* but not in all terrestrial species. Bats use what is called »echolocation«; they depend on the acoustic array established by reflected sound. Despite this difference, bats' sense of where they are – and their degree of prospective control – seem to be at least as good as our own. They can pursue flying insects through leafy webs of branches at high speeds without collision, all in total darkness. It has sometimes been suggested that the phenomenal world of an echolocating bat must be very different from our own, but I think that suggestion is based on a mistaken premise. Modality doesn't matter very much. Perceiving does not begin with sensations – with the hypothetical bits of individual visual or auditory consciousness that were once so beloved of psychologists and philosophers. It begins instead with *information,* which may have the same invariant structure in several modalities. Regardless of modality, we directly perceive the real situation which that information specifies. If the life-world of bats differs widely from our own it is not because they use hearing where we use vision; it is only because they fly through the trees while we walk on the ground.

This may be a good time to say a few words about the role of other sensory modalities for the ecological self. Although I focus here on vision, perception of the ecological self is also supported by hearing and feeling and touch. This is true for everyone, but it is especially clear in the case of the blind. Given reasonable social support, many blind individuals manage fairly well without vision. Among other things, they can make some use of information in the acoustic array. Using what is called »facial vision« (which is actually based on sound), a blind person can perceive

some aspects of the near environment – a large object here, a wall over there. Nevertheless, the absence of vision is a serious handicap. Blind children are slow to explore their environments and slow to understand their immediate situations. They are also slow in using words like »I« and »you«, which depend on a clearly defined ecological self (Fraiberg, 1977; Gibson, 1978).

The ecological self is a perceiver, but it is also a doer – an active agent engaged with the surrounding world. As we act in and on the environment, we are aware of our actions and know them for our own. This is, we *perceive* them for our own, on the basis of what we see and hear and feel. I grasp a glass of water: the visual and auditory and tactile feedback thus produced coincides appropriately with the intention that drove the movement in the first place. That coincidence marks the movement as something I did myself; it also provides further information to guide the next movements as I bring the glass to my lips. Here, then, is another mode of self-perception. I know what I am doing as well as where I am going.

Perceptual awareness extends not only to actions in progress but to those we have not yet undertaken. J.J. Gibson (1979) coined a new technical term, *affordance,* to describe this situation. Right now, for example, the floor of this room affords walking to me, and its door affords passage. What this means is simply that I could walk across the room and go out that door if I wanted to. I could pick up this glass of water and drink from it; for that matter, I could throw it across the room. Affordances need not be inferred or imagined; in many cases they can be directly perceived. I can *see* that the floor affords walking, the glass drinking. By the same token, I can see myself as able to do those very things: another visible attribute of the ecological self. To be sure, I don't see everything. Every situation objectively offers infinitely many affordances for any given individual, of which only a few are perceived and even fewer realized in action.

It would be a fact that the glass affords throwing, even if doing so had never occurred to me. By insisting on the objective existence of affordances, James Gibson broke with a long-established tradition. Although phenomenologists often note that the world and the self are perceived in terms of possible action, they have typically assigned such possibilities to some non-physical realm: to the »phenomenal field«, for example, or the »behavioral world«. As Gibson defined them, however, afforcances are in the real world. They are perceived rather than invented. Indeed, they must be perceived if the individual is to survive.

To say that affordances are in the real world is not to say that they are properties of objects *per se*. They belong just as much to the individual. *I* can drink from the glass, but a paraplegic might not be able to do so; a small fish could swim in the glass, but I cannot. Just as interpersonal relations are essentially *between* one person and another – a topic to which I will come in a moment – so affordances are *between* actors and environ-

ments. They are not properties of either, but relations between them.

Recent research has shown that those relations are perceived easily and accurately. I see at a glance whether an object is within reach, whether a door is wide enough for me to walk through or a chair the right height to sit on. Ballplayers see how they must move to catch the ball, long jumpers adjust their strides to hit the take-off board. Another new concept must be introduced here: such perception is necessarily *body-scaled* (Warren & Whang, 1987). The distances that matter are not measured in centimeters or inches, but in relation to my own bodily dimensions and capabilities. Partly for this reason, the perception of affordances is subject to constant learning and re-calibration. A floor that afforded only crawling to a baby at eleven months affords walking a few weeks later; a fence that afforded leaping when I was twenty affords only clambering now that I am sixty-four. The body in »body-scaling« is that of the perceiver himself. To see an object as within reach is to see it as within *my* reach, given the length of *my* arm and the flexibility of *my* trunk. To see a flight of stairs as climbable is to see that *I* can climb it, given the length and strength of my own legs. This means that in perceiving affordances, we are again perceiving ourselves.

How is this possible? Our own bodies are rarely visible; how can we scale our perceptions to them so exactly? This problem has been only partly solved, but one important source of information has been identified. It is *eye-height:* the vertical distance from the ground to the eyes of the perceiver. Eye height is almost always fully specified in the field of view. To see that this is so, consider first the special case when you stand outdoors on a level plain. Your eye level is then marked by the visible horizon, so that any tree that happens to be bisected by the horizon is necessarily twice as tall as you are, regardless of its distance (Sedgwick, 1986).

The same thing is possible indoors, or indeed almost anywhere. You can try it now: just look around. In whatever direction you may look, your level gaze will meet some object at some distance. You easily see where (that is, how high up) your gaze intercepts that object – so easily that there might as well be a white stripe painted around the whole field of view at eye level! No one needs a mirror to see how tall they are.

A slight digression is worth making here. Eyeheight is not specified *absolutely* in the array, but only with respect to visible objects. If that relationship is read the other way, it specifies the sizes of objects in relation to the self (Neisser & Wraga, 1993). Some things are larger than you, others smaller. You have always seen the sizes of objects in this way, even when you yourself were much smaller than you are today. That is why the house you grew up in may seem tiny when you return to it as an adult. The fireplace that once loomed so large is now of quite a conventional size, the endless hallway just a short corridor, the tree in which you climbed so high hardly more than a sapling. There's no illusion: your perception of object size was right on both occasions, always scaled with

respect to the height of your gaze.

This example suggests that the principles of ecological perception apply as much to children as to adults. Indeed they do, and even to infants. Babies only three or four months old are aware of themselves as active agents in a real environment, just as we are ourselves. That fact has now been established by many elegant experiments. Nevertheless, it has not always been so obvious. On the contrary: through most of psychology's history, from Locke to James to Freud to Piaget, the mental life of infants was regularly described as no better than a buzzing confusion. Where we (as adults) see real and persisting objects, babies were believed to see only blurs of visual sensation; where we experience ourselves as distinct individuals, they were thought to experience only »oneness« with their mothers. Realistic perception was described as a late intellectual achievement, based on the slow accumulation of memories and associations. These assumptions seemed reasonable enough – I once took them for granted myself – but they have all turned out to be wrong.

We now know that babies are sensitive to all the major forms of optic flow. »Looming«, which I mentioned earlier, is one well-studied case. Infants perceive an expanding optical display much as we do: they see a rapidly-approaching object and flinch away from it (Ball & Tronick, 1971). In the same vein, parallel flow specifies movement of the ecological self to children just as to adults. This is easily shown in the »moving room«: a slight movement of the walls is enough to make a standing twelve-month-old fall down (Lee & Aronson, 1974), and the seated posture of younger infants is equally affected (Bertenthal & Bai, 1989).

The case of *occlusion* is especially interesting, because it bears on what used to be called the problem of object permanence. Whenever one object moves behind another, its visible surface disappears from the optic array in a gradual and systematic way. Gibson argued that this »texture-deletion-at-an-edge« is information for perception: it specifies that the object is moving behind a barrier (Gibson, Kaplan, Reynolds, & Wheeler, 1969). Earlier, I described occlusion as information for the relative positions of the objects with respect to the self. The occluded object (call it B) is necessarily further away than the occluder (call it A). This cannot be disputed. But Gibson made another, more controversial claim for the special case where B goes entirely out of sight. When all of its texture has disappeared, one sees that B *has gone* behind A. B is no longer visible, but its position in the environment is fully specified. Thus the fact that objects continue to exist after they go out of sight can be *seen;* it need not be inferred.

This claim was controversial for two reasons. First, it seems counter-intuitive to claim that one can see the present locations of invisible objects. Second, Gibsons's claim contradicts certain well-entrenched assumptions about object permanence. According to Jean Piaget, our belief that things continue to exist after they go out of sight is just that – a belief, an intellec-

tual achievement. Piaget argued that young infants do not yet have this belief: for them, out of sight is simply out of mind.

Recent experiments, testing for object permanence in new and ingenious ways, have supported Gibson's analysis rather than Piaget's. In these experiments, babies first see an object go behind a barrier. They are then shown a further event which would be impossible if the object were still there. For example, a wooden block may be placed behind a screen; the screen then folds down flat onto the table through the space where the block should be. Four-month-old infants exhibit great surprise on seeing such displays (Baillargeon, Spelke, & Wassermann, 1985). Appropriate controls show that they are surprised for the same reason that we should be: what they have just seen is impossible. These and other studies demonstrate that babies have a realistic grasp of the environment. Their experience is no meaningless blur; on the contrary, they are ecologically located selves.

Infants also see what actions that environment *affords* them. The perception of affordances in infancy is especially interesting because babies' capacities for action are so different from our own, and because they change so quickly with development. They reach for nearly objects, but only those that are within reach; they crawl onto surfaces that look capable of support, but not over the edges of cliffs. In short they are much like us, at least where self-perception is concerned. They are aware of themselves *in* the environment, and of the environment in terms of their own bodies and possibilities for action. Perception is not only the most dependable but also the oldest source of self-knowledge.

So far I have told only half the story. I have spoken of the self in the physical environment: of looking at *things,* and perceiving ourselves in terms of what those things afford. How about *people?* Human beings are intensely social animals. In some societies, individuals spend their entire lives within sight or earshot of one another. In all societies, the most meaningful occasions of life involve interaction with other persons. Those interactions may be based on close physical contact, as when we embrace; on acoustical signals, as when we speak to one another; on visual information, as when we smile or exchange gestures; perhaps on other modalities too. Often, it involves several modalities at once.

Whatever their basis, they are what makes life worth living. We would hardly be human without this kind of contact. William James puts it this way:

> »No more fiendish punishment could be devised, were such a thing physically possible, than that one should be turned loose in society and remain absolutely unnoticed by all the members thereof. If no one turned round when we entered, answered when we spoke, or minded what we did, but if every person we met 'cut us dead', and acted as if we were non-existing things, a kind of rage and impotent despair would ere long

> well up in us, from which the cruellest bodily tortures would be a relief; for these would make us feel that, however bad might be our plight, we had not sunk to such a depth as to be unworthy of attention at all« (1890, p. 293).

People do, usually, turn round when we enter and answer when we speak. We do the same for them. Mutuality of behaviour is the rule, not only among humans but for many other species as well. Crickets call to crickets, frogs to frogs; dogs and apes and monkeys encounter each other in systematic, species-specific ways. Every such exchange brings something new into existence: namely, a series of reciprocated behaviors occurring at a particular time and place. Those social exchanges are *perceptible.* What is perceived is not merely the other's behavior, but its reciprocity with one's own. Both participants are engaged in a mutual enterprise, and they are aware of that mutuality.

Considered as a participant in a shared communicative activity, each member of the dyad is an *interpersonal self.* Where the ecological self is an active agent in the physical environment, the interpersonal self is an agent in an ongoing social exchange. That self, too, is perceived: we see ourselves as the target of the other person's attention, and as co-creator of the interaction itself. Though Gibson himself did not make this extension, his claim about ecological perception transposes naturally to the social case: »Egoreception accompanies alteroception like the other side of a coin . . . One perceives the other and coperceives oneself.« This is true whether we are returning an embrace or just maintaining eye contact, improvising in a jazz group or just taking turns in a conversation.

Like its ecological counterpart, the interpersonal self is an active agent in a real environment. You are aware of your own interpersonal activity, and of what its result should be. You then perceive its actual result, the appropriate (or perhaps inappropriate) response of your partner. As in the non-social case, the fit between intentions and outcomes establishes a strong sense of agency, of personal effectiveness.

Human beings confirm one another's selfhood in so many ways that it is impossible to list them all. Almost every personal encounter is mutually regulated: X directs behavior toward Y, and Y to X, in a reciprocal pattern that both establish together and both perceive. This pattern exists objectively and observably: it requires no inferences. To be sure, some theorists have argued that these behaviors are the basis of what they call »non-verbal« or »spontaneous« communication. These theorists treat social behaviors as messages that carry information about the sender's motives and emotions to the receiver. This may often happen, but it is not what I mean here. Patterns of reciprocated behavior exist in their own right. A mutual embrace is a perceptible fact, whatever the true feelings of the embracing participants and whatever they may believe about each other. Interpersonal exchange is something that happens *between* people. To

perceive the possibility of such an exchange – a social affordance, if you will – is not to look inside the other person but at the pattern of ongoing activity. The interpersonal self is not an inner state to be communicated nor a detector of such states in others: it is just a person aware of engagement in a social encounter.

Interpersonal perception, like ecological perception, begins very early in life. Even newborn babies are interested in human faces. Some of them even imitate facial expressions, though others apparently do not. By eight weeks or so babies have become exquisitely social, perhaps more so than they ever will be again. They return their mother's embraces, listen to her voice, look at her face, maintain eye contact. Such infants are still a long way from speech, but when speech is addressed to them they may goo-goo cheerfully in return. These »protoconversations« (Bateson, 1975) between babies and mothers are by no means neutral in tone. They are often happy, punctuated with surges of joy that are systematically coordinated with the mother's own feelings. Such sustained and motivated behaviors testify to the innate human readiness for emotional relationships; they are clear cases of the interpersonal self in action.

A recent experiment by Lynne Murray and Colwyn Trevarthen (1985) illustrates the reciprocity of protoconversation especially well. The subjects of the experiment were Scottish mothers and their six-to eight-week-old infants, interacting over closed-circuit television. Each partner saw a life-size full-face image of the other, and heard the other's voice as well. Under these conditions their exchanges were entirely natural: the babies smiled and goo-gooed at their mothers, who happily responded in kind. After a few minutes of this, real-time communication was interrupted. Instead the baby was shown a *videotape* of its mother, one which had been recorded during the successful interaction a few moments earlier. The results were dramatic. The previously happy babies now became miserable: they looked away from the TV monitor, fidgeted, and generally seemed to wish that they were somewhere else. This happened even though they were seeing the very same visual/auditory display that had given them so much pleasure before! The reason is clear: this time they had no sense of agency. Videotapes do not return gestures, maintain eye contact, or respond to vocalizations. The infants' unhappiness in the videotape condition helps us to understand what they were enjoying during the earlier and more natural interchange: it was their own active participation in what was going on. Like the rest of us, infants know when they are – or are not – reciprocally engaged with another person.

Encountering a person is very different from being engaged with the inanimate environment. Although both engagements are occasions to perceive ourselves, they are epistemologically quite different. The information that specifies the ecological self is based on universal principles of optics. Those principles are the same for everyone: parallel optical flow means »I am moving« to any animal with a developed visual system.

Patterns of interpersonal action, in contrast, are species-specific. Horses do not value eye-contact as we do, and cats do not hold hands. The dominant male stare so important for primates has no counterpart among spiders, probably not even among rabbits. These behavior patterns are consequences of natural selection (just as perceptual systems are), but they are different in different species. In every case, they are critical for that species' social life.

The emotional accompaniments of these two kinds of self-knowledge are different too. The ecological self is a fairly cool customer, competent rather than passionate. Navigating the world is occasionally exhilarating and sometimes fear-provoking, but mostly it is just something we do. The environment is always there for us, and we are always in touch with it. Encounters with persons, in contrast, are very special. We do not entirely control them. They occur irregularly, in ways that depend on the presence and attitude of an essentially mysterious other. Only by the grace of that other can we reach the heights of joy that human contact may bring – or, for that matter, the corresponding depths of despair. The unpredictability must be especially poignant in the first year of life, before language, when the infant has no real grasp of other people's purposes and constraints. Nevertheless it is by no means restricted to infancy: interpersonal relations carry a tinge of the mysterious with them throughout life.

These ideas are not actually new. Although notions like »encounter« and »between« have not been much used by psychologists, they have a distinguished history of their own in the philosophy of dialogue. That philosophy has many advocates, but a particularly powerful formulation is that of the Hasidic theologian Martin Buber, presented seventy years ago in his book *I and Thou* (Buber, 1923/1955). Buber distinguished two primary relations in human life, which he called »I-IT« and »I-THOU« respectively. The familiar relation of I and IT involves the manipulation of objects and persons. We relate to most of the things we meet as IT, using them for our own purposes as best we can. The direct *encounter* with another person, when we meet them as THOU, is something very different. The relation of I and THOU is one of direct engagement, free of intellectual forethought or manipulation. It cannot be forced. The essential component of the encounter with THOU occurs *between* the participants; it is not in either of them taken alone.

There is at least a superficial parallel between Buber's view and my distinction between ecological and interpersonal perception. The »I« of I-IT is something like an ecological self, while the »I« of I-THOU is an acutely interpersonal one. To be sure, Buber's categories are deeper than mine. His IT includes not only the world of perceptible objects but also that of ideas, analysis, and self-centered reflection. Even encounters with other individuals often remain on the level of IT, when we treat them only as objects and do not relate to them directly. On the other hand, the I-THOU encounter can occur even with inanimate objects, with trees or

stones, if we approach them as THOU. A deeply religious person, Buber believed that we can also have such encounters with God. For him, indeed, every THOU somehow participates in the divine.

Although I am not religious in Buber's sense, I also believe that interpersonal contact and social feeling have a special status in human life. Our immediate awareness of interpersonal engagement does not depend on anything else in experience: not on inference, not on reflection, not even on ecological perception. THOU cannot be reduced to a category of IT. Even in early infancy – *especially* in early infancy – there is something unique about relations with other people. The sense of mystery and unpredictability that characterizes genuine encounters with others begins in the first weeks of life. Indeed it may be some dim memory of that primary interpersonal experience that enables us to resonate to Buber's categories – to feel, as he did, that there is something special about the encounter with THOU. After all, we can affirm the ecological self whenever we want to, just by looking and moving around. The interpersonal self, in contrast, comes into existence only by the grace and response of another human being.

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I have argued that all of us see, feel, and hear our immediate ecological and social situations accurately. This claim – the claim that perception is a trustworthy source of knowledge – may seem strange at first. The word »perceived« is often used in a very different sense, one that contrasts sharply with »real«. When politicians believe that the public sees their behavior in an unfavorable light, for example, they do not necessarily change the behavior itself; instead they employ special consultants to change that public perception. In the same vein, advertisers spend large sums to ensure that their products are favorably perceived, even when they do not deserve it. What's worse, many of those products themselves are specifically designed to mislead perceivers – to make us look younger than we really are, for example. Sometimes they are successful in doing so. We seem to live in a veritable age of deception, when nothing – at least nothing in public life – is what it seems. How, then, can I argue that perception and self-perception are accurate?

Two fundamentally different forms of perception are actually at stake. We must distinguish the »associative« perception that is targeted by advertisers from the direct perception produced by real engagement with persons and environments. They are very different – so different that they even depend on separate neural circuitry in the brain. More important here, however, is that they use different forms of information (Neisser, in press). As we have seen, direct perception depends on changes in the optic array that every real action must produce. That's why it's so accurate. Associative perception, in contrast, depends on relating what we see at this

moment to ideas we already have – on recognizing, classifying, evaluating, thinking. That's why it is so easily misled. The particular ideas that come to mind on a given occasion depend on literally hundreds of variables, from cultural predispositions to personal past experiences to momentary moods.

It is the ease with which such variables can be manipulated that gives associative perception a bad name in some circles. Sometimes it deserves that name, but it is also essential to being human. You could not recognize your friends, recall your own past experiences, or assess the real meaning of any life situation without it.

These distinctions are especially important for the self. Ecological and interpersonal perception tell you where you are and what you are doing, but surely there is a great deal more to know about you! And you know a lot of it yourself – that is, you have a self-concept. Loosely speaking, the self-concept (or conceptual self: cf. Neisser, 1988) includes all our beliefs about ourselves – our roles, our attributes, our inner essences, our worth and value. I may believe that I am an American, a psychologist, a husband and father; that I am handsome or ugly, stupid or smart, important or worthless; that I have a liver, a kindly disposition, an immortal soul. All of these are beliefs, none of them are based on direct perceptions. In principle they could all be mistaken, and in practice some of them surely are.

There are also self-narratives, the life stories that all of us tell to extend the self into the past (Neisser & Fivush, in press). They have an equally uncertain status. Although the narrative mode is currently very popular among philosophers (remember that Dennett ends by concluding that the self is only a »narrative fiction«), there is nothing certain or fundamental about narrative accounts of the self. Each of us has a life story that we like to tell, but that story is not necessarily accurate. As a psychologist with a long interest in the study of memory, I am familiar with many examples of deeply mistaken recollections. But this fallibility does not make narratives less attractive to the post-modern temperament; on the contrary, it seems to be their particular charm. As it happens, that charm is lost on me. I always like to know whether a story is true or false, though I do recognize the difficulty of distinguishing one from the other. In any case, we need self-narratives as we need self-concepts; we would hardly be human without them.

Where do self-concepts and self-narratives come from? We learn them, of course. That learning begins early in childhood, but not so early as perception. Recent developmental studies place the beginnings of conceptual thought at a time near the end of the first year of life. The ecological and interpersonal selves are already firmly in place at that point, as indeed they must be; conceptual thought would be impossible without the foundation that perception provides. Children learn concepts almost exclusively from other people. Modern research shows that they do it only

on occasions of shared attention (Bruner, 1983; Tomasello & Farrar, 1986), when they and their tutor are attending to the same thing and both parties know that this is the case. Those occasions, which are critical for the acquisition of language as well as concepts, depend on interpersonal perception for their very existence.

How, then, does the self-concept originate? It must begin with a special subset of the occasions of joint attention I have just described – namely, that subset in which the object of joint interest happens to be the child himself (Tomasello, 1993). It is when mother says »That's a good boy!« or »Did you do that?« – when she talks *to* the child *about* the child – that the self-concept first comes into existence. Now the child, like the mother, begins to take himself as an object of thought. He thinks of himself as having traits, characteristics, worth and value; in short, he is a conceptual self. Sometime later, toward the end of the second year, he notices something new about himself: his *appearance* matters to other people. It is only then that he works up much interest in his own mirror reflection, and displays the behaviors that some theorists take as signs of the first appearance of the self.

The self-narrative begins still later, sometime in the third year or so. It is only then that children develop any interest in the past or the future, and begin to acquire the memory skills on which all such narratives depend. They start to tell their life stories, past and future. It is a process that never really comes to an end. Even as adults, every new encounter has at least some potential for changing our self-narrative and our self-concept. Some encounters, like those with psychoanalysts and therapists, may be explicitly undertaken with that purpose in mind. I do not undervalue those efforts, nor do I dispute the importance of concepts and narratives as sources of self-knowledge. But they are not the *first* such sources; that honor goes uncontestedly to ecological and interpersonal perception.

Even later, it is the perceived self to which all the more intellectual modes of knowing ultimately refer. Whose story does my self-narrative tell, if not that of the perceptible persisting self who has just now made it all the way to Denmark? What entity does my self-concept describe, if not the person now ecologically located here in Aarhus and interpersonally engaged with those of you who have patiently continued to listen? The perceived self is what those other selves are about, what they refer to, what they mean. Even in those cases where a mystical self-concept denies any importance to the present world or the physical body, it is the ecological self that they must deny. What cannot be denied, I think, is that perception is first.

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