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AN ALTERNATIVE TO "UNCONSCIOUS MENTAL PROCESSES"

BRUCE L. BROWN, Ph.D.

I have been a student of psychology now for twenty-two years. As far back as I can remember, I have had a lingering question: "How can such an important characteristic of mankind as the unconscious mind escape any mention in the scriptures." After all, if our actions are controlled by a part of us that is beyond our awareness and our introspection, then a knowledge of this unexperienced "agency" is essential if we are to have a correct understanding of the meaning and purpose of life.

The question has not seemed urgent, but it has been perennial. I have heard a number of trivial answers to the question over the years, (like "the scriptures also don't mention the existence of an hypothalamus or a pituitary gland"), and I have heard a number of testimonials from clinical practitioners as to the reality of the Freudian unconscious, but the question has still remained.

I do not dismiss lightly the *observations* (clinical anecdotes as well as *some* of the research findings) upon which "unconscious" theory is based. But I do doubt the "received view," the commonly accepted theoretical explanations that are given for such observations, and I have for as long as I can remember. I am now quite sure that these theoretical explanations of such observations are wrong, and wrong in a fundamental way.

My view of theories in the behavioral sciences has evolved into a general rule—if you are going to bet on one, bet that it is false. The only question is how much of it is false. For me the major issue has

not been how to deal with or "integrate" such theories with my most deeply held beliefs. I view theories as only scaffolding, helpful in finding otherwise overlooked observations. I see no reason for trying to reconcile or integrate psychological *theory* to one's faith. The major issue, I believe, is to seek to understand how *observations* that have been corroborated convincingly and repeatedly can fit within the revealed perspective of eternal man.

During the middle 70s I was part of a research group at BYU in which a number of us jointly pursued topics related to the question of "unconscious mental processes". Much of my current thinking on these issues has been shaped and influenced by the ideas of the colleagues in that group. Although we only met for a year or two, my own research and writing were enriched for many years after by the ideas that came out of those meetings.

It wasn't until almost five years after those meetings ended that some things began to come into place for me with respect to the lingering question of the "unconscious". A number of ideas converged in a kind of "aha" experience, and for the first time I began to see a clear alternative to the "split psyche" kinds of explanation. It wasn't something I was ready to try out on someone else. I couldn't find words for it. But I felt that my own question was settled in a way that was personally satisfying.

In the years since then, I have tried to integrate that inchoate but illuminating insight into my research and writing, and I even tried to explain it to others in a BYU forum address (Brown, 1983) and later an AMCAP talk (Brown, 1985). But it is a complex and many-faceted collection of ideas, and it is always an unsatisfying experience to try to explain it in a forty-minute lecture. It is certainly not an

original contribution (if such really exists), but an integration of the work of a number of theorists in psychology and philosophy. A one-semester course where all can investigate a number of sources together is more adequate than a lecture or a paper as a forum for dealing with it. Nevertheless, being an optimist, I will now try to review some of those sources and sketch the outline of those ideas in this paper. The paper will undoubtedly be, from your perspective, too long, and from mine, too short.

If I were to try now to summarize this view in a few sentences I would say that the same phenomena that have been taken to be evidence for unconscious mental processes can be equally well accounted for using simpler and less sensational principles of holistic perception, similar to those put forth by the Gestalt psychologists. The Freudian unconscious is an invention rather than a discovery. *It is an artifact of atomism.* ("Atomism" is the behavioristic fallacy of separating incoming information into discrete stimulus units and human action into discrete response units.) As soon as one looks at perception and human action holistically rather than atomistically, the paradoxes that drive such theorists to posit two minds disappear.

I would further argue that the received cognitivist view is wrong in its implicit assumption that we are for the most part explicitly aware of our thoughts, perceptions and actions. When one views perception this way, then it is surprising to find evidence that some things are perceived without awareness. From within this view, "subliminal perception" is a momentous discovery.

I reject the "subliminal perception as a special case" view. On the contrary, I hold that the great majority of human knowledge and interaction remains inarticulate, tacit and holistic, and it takes mental work to spell it out. In other words most of our mental life is tacit, and the thing to be explained as a special case is how we make *any* of our experience explicit or articulate. We know more than we can say. To articulate what we know or what we experience is a kind of achieve-

ment that requires mental work, but it usually falls short of the greater inarticulate knowledge that we have. An attempt to capture human knowledge and experience in a cage of words will often involve distortion and will always be incomplete.

That is the short form of the argument. Now in the remainder of the paper I will try the long form, beginning with a review of the philosophical objections to the psychodynamic view. Armed with these logical arguments against "unconscious" theory, we will look at their relevance to the models of contemporary cognitive and social psychology. Then, after comparing the various forms of the "unconscious mind" concept, in the last half of the paper we will examine an alternative form of explanation based upon Polanyi's philosophy of tacit knowing, Gibson's holistic perceptual theory and some implications of contemporary psychopsychics. The essential ideas of the argument will proceed something like this:

- 1) Although many clinicians still take the psychodynamic view of mental life as a given, existential philosophers such as Sartre and Fingarette have convincingly demonstrated that this "received view" is logically bankrupt. It is conceptually flawed beyond repair.
- 2) After a stormy forty year history, the concept of "unconscious mental processes" is now an accepted part of contemporary cognitive science. That is, in almost total disregard of the telling logical arguments against the two-agent psychodynamic view, contemporary cognitive theorists have adopted a version of it in their information processing models. Most cognitive theorists erroneously think that a computer metaphor solves the logical problems, but it does not, and the cognitive models can be faulted on the same grounds as the psychodynamic ones.
- 3) These issues and arguments are central to a number of research traditions within psychology, including the perceptual defense and vigilance literature, the related subliminal perception literature, the cognitive dissonance and attribution theory traditions within social psychology, and the

"split-span attention" research tradition within cognitive psychology.

4) Within this diverse potpourri of psychological research and theory, two paradoxes can be identified. One has to do with how one can perceive without awareness (the subliminal perception paradox), and the other has to do with resistance.

5) Both paradoxes are an indication of the need for a reconceptualization, a transformation in the way such things are viewed. A proposal will be offered based upon Polanyi's philosophy of tacit knowledge, Gibson's ecological approach to perception and recent developments in psychophysics.

6) This proposed approach is referred to as "transparency theory," but it is really more of a meta-theory. That is, rather than offering an alternative theoretical explanation for old observations, it is a transformation of vision that affects the empirical observations themselves. It involves a more careful reading of the primary data that obviates the need for heavy, occult explanatory burdens like the "unconscious."

Objections to Psychodynamic Theory from Existentialist Philosophers.

Although there has been much interest over the years in providing empirical evidence for the concept of an unconscious, the primary motivation for the concept has not been empirical. Its roots are rather in the ubiquitous observation of *resistance* in therapy and in everyday life. Admittedly there have been many studies over the past 50 years aimed at demonstrating the existence of the "unconscious" or "unconscious mental processes." (Witness, for example, the thousands of studies in the "perceptual defense" tradition.) But the studies have been a search for corroboration of the concept rather than the source of that concept. That is not to say that the concept doesn't have some basis in observation, but its primary basis is subjective clinical experience rather than the results of research.

The clinical phenomenon of *resistance* is closely related to the psychodynamic concept of repression, the concept of "self-

deception" from existentialist philosophy, and more informal concepts that come from clinical practice such as "self-defeating behaviors." Although these concepts have come from diverse traditions, there are important similarities. All have in common the observation of apparently purposive actions that seem to be contradictory to the person's avowed intentions. This strange state of affairs can be illustrated by an example from the existentialist Sartre's (1953, pp. 96-98) description of "self-deception" — his well-known example of the woman who colludes in her own seduction. The man's intentions are obvious to anyone but her, and even her own actions indicate some kind of inarticulate awareness of his intentions. Her actions are complementary to his in a way that could only be described as purposive and intentional. Yet one could not describe her protestations of innocence as a lie. Sartre (p. 88) maintains that in a cynical lie one creates for the other a "transcendent" character, a self that does not exist. It is intended only for the consumption of the other; the liar is not himself taken in by it. But she seems to "lie to with sincerity," to be fully taken in by her description of things. When and if her part were to become clear to her, she would be genuinely surprised. But if one were to try to point out her complicity to her, she would not receive the information in the way one would expect of innocence, but would resist and protest. The self-deception phenomenon, then, is distinguished from cynical lying by *surprise* and from ignorance/innocence by *resistance* as diagrammed below:

	surprise	resistance
cynical lying		✓
self-deception	✓	✓
ignorance	✓	

If it is a lie, then it is one that seems to be believed by the liar, hence the term "self-deception." But if we look at the logic of what we have just said, it is clearly

paradoxical. For as the deceiver one must know, but as the deceived one must not. In Sartre's words, "I must know the truth very exactly in order to conceal it more carefully—and this not at two different moments, which at a pinch would allow us to re-establish a semblance of duality—but in the unitary structure of a single project" (p. 89). After giving examples of the ubiquity of the phenomenon he concludes, "Our embarrassment then appears extreme since we can neither reject nor comprehend bad faith" (p. 90). "Bad faith" is the translation usually given to *mauvaise foi*, the phrase Sartre uses to refer to self deception.

One way of viewing the psychodynamic concept of the unconscious is as a way of dealing with the paradox of resistance, the same paradox philosophers refer to as the paradox of self-deception. By positing two minds within the person, it is possible to think of the person as being at one and the same time both the deceiver and the deceived. The resisting client is not one but two, and one part wants to help the therapist deal with the problem while the other blocks his efforts to uncover it. The paradox disappears! It is a shallow and ad hoc way of dealing with the logical problem, but it is amazingly current. As will be shown in the next section, it is closely parallel to recently proposed solutions (Dixon, 1971 and Erdelyi, 1974) to the perceptual defense paradox (which is a special case of the self deception paradox).

Sartre (1953, pp. 86-96) has raised a number of objections on logical grounds to this Freudian way of dealing with the resistance paradox. His arguments are incisive but subtle. On successive rereadings it becomes overwhelmingly apparent that there is no hope for the psychoanalytic model as a way of comprehending "bad faith." Among other objections he argues that:

- (1) The act of resistance implies a self-reflective consciousness which could certainly not be characteristic of the raw instinctual impulses that are attributed to the Id. (p. 92)
- (2) It cannot be the Ego which resists, for the information is repressed in order to hide

it from the Ego. The self-deception would then be entirely conscious. Nothing is added to the logical dilemma by positing an unconscious if this is the case (pp. 92-93). Also, if the repression were an act of the Ego it would also be necessary for the Ego to repress the act of repression and then to in turn repress the knowledge of this second repressive act, and so on to an infinite regress, since the act of repression has implicit within it the reason for repression. (See Fingarette, 1969, p. 114, for a lucid summary of this Sartrian point.)

(3) Freud's positing of a censor "as a line of demarcation (between conscious and unconscious) with customs, passport division, currency control, etc., to reestablish the duality of the deceiver and the deceived" (p. 90) also will not work. It only relocates the paradoxical duality at the level of the censor (pp. 93-94). In other words, the censor must be in "bad faith," which is still paradoxical.

(4) "By rejecting a conscious unity of the psyche, Freud is obliged to imply everywhere a magical unity linking distant phenomena across obstacles" (pp. 94-95). In other words, the act of repression itself is unitary, so how can it be accomplished by separate "minds?"

Perhaps one of the most disturbing questions is how repression could possibly ward off psychic pain. That is, how could a person be saved pain by keeping threatening information from one part of the mind when the defending part of the mind would have to understand the full import of that information? Fingarette (1969) makes a similar point and then asks:

Once we abandon the notion that defense brings a kind of blissful ignorance to some 'agency' of the mind, the question forces itself upon one: Why should anxiety be reduced by defence any more than, better than, or differently than would be the case if we merely curbed our impulses and/or deceived others quite consciously? (p. 116)

A thorough consideration of the logical issues surrounding the self-deception paradox is beyond the intent of this paper. The interested reader is referred to

the analyses by Fingarette (1969) and Warner (1982). For our purposes it is enough to show that the psychodynamic approach is conceptually inadequate to the task. Before closing this discussion I will describe an approach to the self-deception paradox that represents a substantial advance over the psychodynamic one. Then in the next section I will review some approaches to similar paradoxes in contemporary cognitive psychology and show that the explanations are strangely parallel to the psychodynamic one and fail in similar ways.

In his classic treatment of self-deception, Fingarette (1969) advocates a shift in discussing consciousness from the language of perception to the language of volition. He argues that the crux of the difficulty has been our characterization of self-deception in the passive language of perception, such as "appear" and "see." He proposes that we shift to a metaphor of linguistic or paralinguistic volition, "to say" or "to avow", emphasizing the constructual nature of consciousness. This is very much like Polanyi's (1964, chapters 4 and 5) characterization of articulate awareness as an achievement requiring some mental effort.

Chapter 2 of Fingarette's book is an insightful demonstration of the difficulty of adequately explaining self-deception. He shows that in every case the philosophers who have tried to explain away the paradox have failed in one of two ways. Either they explain it in a way that is not paradoxical but fail to capture the "resistance" aspect of self-deception, or they succeed in capturing the phenomenon only to see paradox return in a variant form. If one "fails to notice," no resistance is involved, and it is simple ignorance—not self deception. One must *refuse* to notice. Nor can one's refusal be acknowledged by himself, even within his own mind. That would be cynical lying rather than self-deception. Self-deception differs from lying in that a person is genuinely surprised when and if his deception is revealed to him.

In Fingarette's volitional model he describes consciousness as "the exercise of

the (learned) skill of 'spelling out' some feature of the world as we are engaged in it" (p. 39). His explanation of self-deception turns on a special kind of spelling out which he calls "avowal." To avow is to spell out something that asserts one's identity to oneself. A self-image is the product of this kind of construction, a product of willful action. In building a self-image we not only use some materials, we reject some. With this simile Fingarette intends to account for resistance. But, this account fails in both of the ways he shows that the others have failed. When he speaks of avowing some things and *failing to avow* others, he is speaking of ignorance — no resistance is involved. When he speaks of actively *disavowing*, he is dealing with the self-deception phenomenon alright (resistance is involved), but paradox returns. He slips back and forth between these two without acknowledgement in showing that the simile is both non paradoxical and adequate to the phenomenon of resistance. As he warned early in his book, "There is a particular slipperiness about the object of investigation" (p. 13).

But there is much in Fingarette's account of self-deception that is useful. His proposal that we shift from a passive vocabulary in accounting for consciousness to an active volitional one is an important advance, as is his typification of the mental acts involved in self-deception ("spelling out" and "avowal") as being primarily linguistic and paralinguistic. Fingarette proposes that Freud came to similar conclusions with respect to the linguistic nature of consciousness:

I have shown in detail elsewhere (*Self in Transformation*, Chapter 1) that whatever the other changes in his theoretical views over the years, Freud always was convinced that language was the essence, or very intimately related to the essence, of preconsciousness and consciousness. This strongly suggests, though Freud never put it this way, that the 'mental act' denoted by 'hypercathexis' is essentially a kind of linguistic or paralinguistic act. It is, I suggest, much the same as what I have called 'spelling out'. (Fingarette, 1969, p. 121)

In the summary of "transparency theory" in a later section of this paper, I will expand upon this view and propose that self-deception and even many kinds of "mental illness" can be productively understood as particular kinds of nonverbal assertion, that is, as types of paralanguage. (See Brown, Warner and Williams, 1985, for a more detailed explanation of this view.)

The Splitting of the Psyche in Contemporary Cognitive Psychology.

The major body of empirical work on the unconscious has been within the perceptual defense research tradition. Dixon (1971) and Erdelyi (1974) argue that the combined sum of all of this research has firmly established the existence of unconscious mental processes. In his review and resuscitation of the "new look in perception," Erdelyi (1974) sampled over 1000 research publications on perceptual defense and vigilance, "gargantuan proceedings" as he called them, and argued that the disillusionment with this research topic in the late 1950s was premature and mistaken. He went to great lengths to meet the methodological criticisms and to show that even when giving the critics the benefit of the doubt, there is still ample evidence to establish the perceptual defense and vigilance phenomena.

Most interesting for the thrust of this paper is his way of dealing with what Howie (1952, p. 311) calls "the most serious criticism of all"—the conceptual one. This criticism holds that perceptual defense cannot be established empirically because it makes no sense conceptually—it is paradoxical. Briefly put, the paradox is this: in order to defend against a threatening input, the perceiver must already know enough of its content to be intimidated. He therefore hides from himself what he already knows. Worse yet, he also must hide from himself the act of hiding the content, since the act includes his motive or reason for hiding it. Paradoxical indeed! This paradox is obviously a special case of the self-deception paradox, in this case applied to perception.

Erdelyi's answer to the perceptual defense version of this dilemma is to don the mantle of the information processing cognitivist. To an information processing theorist there is nothing at all surprising about parallel processors, even one called "conscious" and another that is not conscious. Nor need anyone feel threatened by animism in admitting unconscious processing in this day and age (Erdelyi, 1974, pp. 3-4), since all of these supposedly purposive entities can be explained mechanistically in terms of computer logic. His argument closely parallels one given a few years earlier by Dixon (1971, pp. 223-229), also a defender of the perceptual defense faith. For both theorists there seems to be an implicit acceptance that reduction to mechanistic entities, either in physiological or computer logic terms, makes the two-agent explanation acceptable. A paper by Dennett (1978) entitled "Why the Law of Effect Will Not Go Away" demonstrates how compelling this kind of argument can be at its best. In this view the artificial intelligence theorist can proceed in his computer program to posit agents, demons, and all kinds of animistic entities, as long as it is remembered that all such things will finally be reducible to "and gates," "or gates," etc., in the hardware language. The old behaviorists insisted upon both parsimony and mechanistic thesis. The new information processing psychologists (closely associated with the artificial intelligence establishment) are content with only one—the mechanistic thesis. They are willing to sacrifice parsimony and multiply agents as long as those agents are ultimately reducible to mechanistic elements.

These same kinds of phenomena have appeared in a much more recent tradition, one of the hot areas of the cognitive psychology of the 70s — selective attention. The development of the evidence and the debates are generally known and will be only briefly alluded to here. The controversy centers on the fate of unattended items in a dichotic listening task: are they processed semantically or are they somehow "filtered" from semantic processing and rejected on the

basis of superficial features? Some (Deutsch and Deutsch, 1963; Lewis, 1970; Corteen and Wood, 1972; Corteen and Dunn, 1974; Inouye, 1975) claim to have evidence for full semantic processing of the unattended channel. Others (Treisman, 1964; Treisman and Geffen, 1967; Treisman and Riley, 1969; Treisman, Square and Green, 1974; and Treisman and Gelade, 1980) claim that unwanted information from the unattended channel is rejected on the basis of *features* of the input, without full semantic processing.

Dixon (1971, Chapter 10) and Erdelyi (1974, pp. 11-12) have both recognized that the conceptual machinery used by attention theorists is essentially equivalent to their own accounts of perceptual defense, and on that basis have claimed a rightful place for perceptual defense theory in contemporary cognitive psychology. A major thrust of Dixon's book is the question of why the multitude of subliminal perception studies and perceptual defense studies have been ignored and spurned by academic psychologists while the closely related demonstrations of selective attention have been received as some of the most important cognitive research of the past twenty years.

Early approaches to attention theory (Treisman, 1964) did not involve a "two agent" explanation, but hypothesized a simple mechanistic filter that was preset to reject most words in the unattended channel while letting just a few with lowered thresholds (such as the subject's own name) through. This accounts for the so-called "cocktail party phenomenon" described by Cherry (1951) a few years earlier in which one can be attending to one conversation but then hear one's name mentioned in another conversation and immediately shift attention. Presumably the threshold for one's own name is permanently lowered. But other more recent evidence indicates that the filtering cannot be a "preset" thing, but must be done on the basis of the *meaning* of the input—full semantic processing of the unattended channel. For example, Lewis (1970) showed that even though subjects are not able to recognize and report the words of

the unattended channel while "shadowing" (repeating back) the words of the attended channel, still when the word coming to the unattended channel was a synonym to the shadowed word in the attended channel (like "house" and "home") it slowed down the subject's reaction time in repeating the attended word. Of course there is no way for the subject to know that the words are synonyms unless he is processing each unattended word for meaning, and this without awareness. This kind of observation requires a very smart filter, one that processes meaning just as the "executive" or "central processor" does. We are left with a kind of "dual agent" cognitive model.

That these attentional theories would eventually be pushed to posit a splitting of the psyche (comparable to the Freudian one) was anticipated early by Deutsch and Deutsch (1963):

... such evidence as the above would require us, on filter theory, to postulate an additional discriminative system below or at the level of the filter, perhaps as complex as that of the central mechanism to which information was assumed to be filtered.

With evidence (such as that from Lewis's study) indicating that the "filtered" unattended information is in fact processed semantically, we then ask what the "central mechanism" can do that the "filter" can't. If, as Dixon and Erdelyi suggest, this "filter" is also implicated in perceptual defense, then it must have knowledge of the whole personality structure of the person in order to discriminate threatening from non-threatening inputs. What started out in attention theory as a simple mechanistic filter is pushed by observations (such as those of Lewis, 1970; Corteen and Wood, 1972; Corteen and Dunn, 1974; Inouye, 1975) into becoming a system capable of dealing with meaning—a second mind, a bifurcated psyche reminiscent of the psychodynamic one. *How ironic it is that the academic psychology that spurned the "Freudian fictions" a generation ago now posits similar entities. But they are made respectable by*

the promise that they are reducible to Boolean logic and can be modelled on a computer. It seems acceptable to multiply "processors" to the extent necessary to account for the phenomena (with little concern for elegance or parsimony) as long as each one is ultimately explainable in physicalistic terms.

There have been objections within mainstream cognitive psychology to this kind of theorizing. Neisser in a 1976 book criticized the attentional theories of the preceding decade, primarily on the basis of their mechanical passivity. As he said in the introduction to *Cognition and Reality* (1976):

The last of the questions that generated this book concerns the conceptions of attention, capacity and consciousness. In writing cognitive psychology a decade ago, I deliberately avoided theorizing about consciousness. It seemed to me that psychology was not ready to tackle the issue, and that any attempt to do so would lead only to philosophically naive and fumbling speculations. Unfortunately, these fears have been realized; many current models of cognition treat consciousness as if it were just a particular stage of processing in a mechanical flow of information. Because I am sure that these models are wrong, it has seemed important to develop an alternative interpretation of the data on which they are based . . . (pp. xii-xiii)

Neisser's 1976 book was strongly influenced by the perceptual theory of J. J. Gibson. In his classic 1966 treatise, *The Senses Considered as Perceptual Systems*, Gibson argues that to divide human action into discrete stimulus and response units is much too glib. Motoric action is an integral component in perceptual processes. Likewise, there is much perceptual feedback needed for skillful motor action. The passive "camera model" of perception comes from basing theory primarily upon visual perception. The motoric component is much more obvious in haptic (touch) perception. We must feel in a purposive way in order to perceive the shape of things. He argues that a subtler but similar motoric initiation is present in vision. Gib-

son also opposes "atomism," the isolation of single stimulus (or response) units, arguing instead for an active search and sampling of an "optic array" (or auditory or haptic array).

There is an important parallel between the way Sartre and later Fingarette have objected to the mechanistic Freudian way of dealing with the self-deception paradox by splitting the psyche, and the objections of Gibson and Neisser to similar models in information processing psychology. Fingarette's proposal, that much of the problem in dealing with the self-deception paradox can be avoided by changing from a passive visual metaphor to a volitional one is also parallel to Gibson's proposal for a shift to an active volitional model of perception. We will see in what follows that this approach, when combined with Polanyi's concept of tacit knowledge, does indeed open the way for a more adequate conceptualization of so-called "unconscious mental processes." But before considering Polanyi, we will examine one other place these phenomena have been studied within psychology.

Self Deception in Social Psychology.

Self-deception and related phenomena have also been studied within the field of social psychology but under other names. "Cognitive dissonance" (Festinger, 1957) is obviously related to self-deception theory. One of the typical experiments (Festinger and Carlsmith, 1959) is to have subjects perform a very boring task such as turning over spools for half an hour then paying them either one dollar or ten dollars to convince incoming subjects that it is an interesting task. Contrary to behavioristic predictions, the subjects who are reinforced less, the one-dollar subjects, actually come to believe their own statements, that the task was interesting, more than the ten-dollar subjects, the ones who are reinforced more. The usual explanation is that the ten-dollar subjects have adequate explanation for why they would deceive incoming subjects, but that the one-dollar subjects must do some rationalizing to "reduce the

dissonance" by convincing themselves that it really was an interesting task.

The phenomenon would be better titled "moral dissonance," since it is more than just a contradiction within the subjects' beliefs. Their supposed collusion with the experimenter in misleading incoming subjects (while actually being deceived by the experimenter) is an indictment of their integrity. But the usual way of discussing the findings is to argue that whenever a person holds beliefs that contradict one another, that person will be motivated to alter one or the other of the beliefs to restore balance to the cognitive system. I propose that when the dissonance is *only* cognitive, involving no moral culpability on the part of subjects, the effects would be quite different, and for that reason "moral dissonance" or "ethical dissonance" would be more apt terms for the phenomenon than "cognitive dissonance". I further argue that the phenomenon could even better be given Sartre's familiar term of *mauvaise foi*, or self-deception.

In the era when cognitive dissonance theory was invented there was much less concern about experimenter ethics. The paradigm is a curious one for many reasons. The experimenter deceives subjects in order to catch them in a self-deception. In order for the study to "work," the subjects must be deceived about the true purpose of their participation. The most interesting thing about this whole line of experimentation is that the cognitive dissonance theorists do not mention or seem to notice the paradoxical nature of their subjects' actions. Certainly at some point in time the subjects noticed that the task was boring. What could they possibly say to themselves to later be convinced otherwise? And even if they could somehow successfully "repress" the contradiction, would they not also have to repress the repressive act, to an infinite regress?

A few years ago Gur and Sackheim (1979) published a paper entitled "Self-Deception: A Concept in Search of a Phenomenon" in which they set as their task to give adequate empirical evidence to support the self-deception concept as it

exists in the philosophical literature. But I would argue that there has been adequate empirical precedent for the concept for some time now, even in some of the most major traditions of cognitive and social psychology. What is still missing in the psychological literature is a noncontradictory *theoretical* treatment of the phenomenon.

It is curious to note that although Festinger did not discuss his "forced compliance" studies in terms of their relevance for the concept of unconscious mental processes, later investigators in that research tradition did. Festinger accounted for his findings in terms of "dissonance" as an aversive motivational state that the person will seek to reduce. But Bem (1967) argued that the hypothesized drive was an unnecessary one, that all of the findings could be explained more simply in terms of environmental contingencies. He maintained that the person observes his own actions and then attributes cognitive and emotional states to himself just as he would in explaining the actions of an observed other. In several simple studies he demonstrated a very obvious thing: not only will a person believe his own statement more when paid less for giving it, but a second person observer will also believe the person more when he sees that the person was paid less for saying it.

But it was not Bem who saw the implications of his work for unconscious mental processes. In a 1977 *Psychological Review* paper entitled "Telling More Than We Can Know: Verbal Reports on Mental Processes", Nisbett and Wilson picked up on Bem's point (that we have no private access to the causes for our own actions but rather infer those causes from our observations of those actions, just as we would do in explaining the behavior of another person). In the intervening ten years between Bem's 1967 *psychological Review* paper and Nisbett and Wilson's 1977 one, Tversky and Kahneman's (1974) demonstration of the irrationality of decision making under uncertainty became well-known and Kelly's attribution theory (1967, 1972) called attention to attributional bias in social judgment. The case

against accurate introspection of one's mental processes was growing. Nisbett and Wilson (1977) reviewed a number of studies in the cognitive dissonance tradition, the learning-without-awareness literature, helping behavior research, and other areas — all demonstrating that people are not aware of the processes and reasons underlying their judgments. Altogether, they give impressive evidence for Mandler's (1975, p. 241) statement that the "analysis of situations and appraisal of the environment . . . goes on mainly at the nonconscious level."

Nisbett and Wilson are aware that the studies they review converge with the subliminal-perception/perceptual-defense research. They give a brief summary of that literature and comment (p. 239) that Dixon and Erdelyi were successful in obtaining a new acceptance for perceptual defense phenomena on the grounds of convergence with the selective attention and filtering research. They also mention the logical paradox problem of this literature, but like Dixon and Erdelyi they erroneously conclude that an information processing account resolves the paradox (see p. 24). The computer metaphor is a seductive one. Somehow it seems that if a computer "filters out" threatening information that we don't have to worry about how it could have been recognized as threatening without it first being received. Actually there are two paradoxes here, one having to do with perceiving below the threshold of perception (and it will not be easily dismissed by saying the person perceived it but forgot, as Nisbett and Wilson do on page 240), and the second having to do with resistance. Subliminal perception involves only the first, but perceptual defense involves both.

Before outlining an alternative way of dealing with these phenomena and these paradoxes, it may be helpful to examine the relationship between the concepts of subliminal perception, perceptual defense and self-deception.

A Comparison of Concepts.

Dixon's (1971) book not only reviews the perceptual defense and vigilance

literature but the more general topic of all subliminal perception. *Perceptual defense* is a type of *subliminal perception*, but a special type that involves not only subliminal perception but also something akin to the clinical phenomenon of resistance. *Subliminal perception* simply involves perceiving "signals" that are below the usual threshold of perception. But *perceptual defense* involves a kind of refusal. Threatening information is not perceived even though neutral information at the same "amplitude" can be perceived. We can view perceptual defense, then, as a special case of subliminal perception. It is subliminal perception (of the threatening nature of the input) plus resistance. It involves refusing to perceive, but this refusal must be based upon some knowledge (ostensibly subliminally perceived) of the threatening nature of the input. It is also, then, a special case of the self deception paradox. The person must in some way know the information in order to refuse to learn it.

Figure 1 is given to clarify the relationship of four concepts: (1) unconscious processing (or as we prefer to call it "tacit knowledge and action"), (2) subliminal perception, (3) self-deception and (4) perceptual defense and vigilance. Many philosophers have made the point that terms such as these are "theory laden." That is, the terms themselves contain more than a description of the phenomena, they "buy into" a particular way of explaining those phenomena. In proposing an alternative theory, it is a difficult choice between using the old terms in order to have continuity with previous literature or choosing new ones that express the alternative explanation. I have stayed with the terms "subliminal perception" and "self-deception" to keep continuity with previous work (even though those terms don't adequately reflect how I view the phenomena), and I have also kept the term "perceptual defense," but I have abandoned the term "unconscious processing" (in favor of "tacit knowledge and action") because it is too far from the way I will explain such phenomena. The meaning of the term "tacit" will become more clear as we

examine Polanyi's philosophy in what follows.

Figure 1 is meant to show that the self-deception phenomenon is a special case of tacit knowledge and action. That is, to account for it we will first have to have an adequate general theory of tacit knowledge and action. The concept of self-deception involves tacit knowledge, but it also involves resistance.

Subliminal perception can also be

considered to depend upon an adequate theory of tacit knowledge and action. It deals with the application of such a theory to the process of perception. Perceptual defense also deals with tacit perception, but tacit perception where resistance is involved. In that way it can be thought of as a special case of subliminal perception (subliminal perception plus resistance), and also as a special case of self-deception (the perceptual manifestation of self-deception).

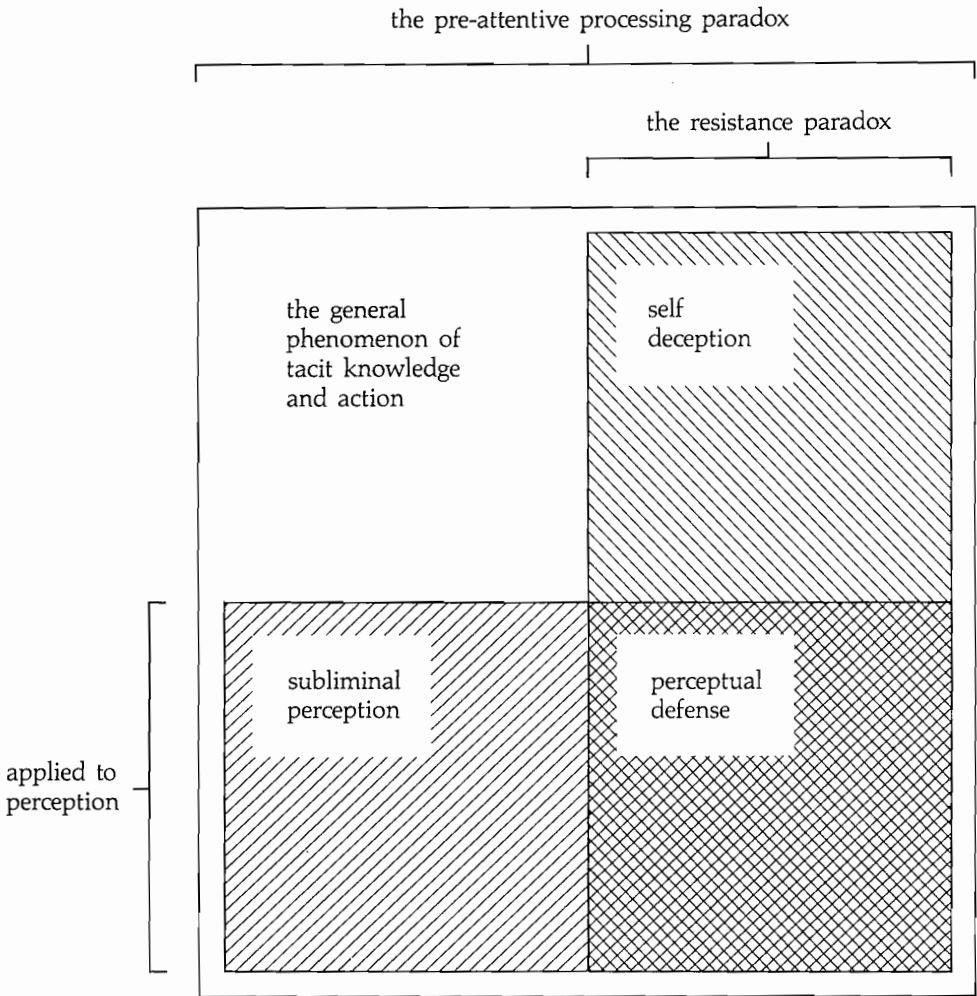


Figure 1. The relationship of the concepts of tacit knowledge and action, self deception, subliminal perception and perceptual defense to one another and to the two paradoxes.

Neisser and Gibson have both been resistant to the perceptual defense phenomenon. Given the confused way it has been treated in the psychological literature, that is probably to their credit. But it can be shown that phenomena that both of them acknowledge as *bona fide* involve the very same paradoxes. Gibson (1966) in his influential theoretical account of perception makes a brief allusion to these issues in a section entitled "The Muddle of Subliminal Perception." He says,

Certain experiments purported to show that an observer could perceive meanings or suggestions unconsciously, or could discriminate them without awareness of the sensory difference between them. This seemed to imply unconscious defense mechanisms governing perception as well as motivated behavior—wishful perceiving. But to say that one can perceive in order not to perceive is a logical contradiction. Something is wrong somewhere. (p. 291)

It is clear from this quote that Gibson did not see a distinction between the subliminal perception hypothesis and the more restrictive hypothesis of perceptual defense.

Neisser in his 1967 book on cognitive psychology also gives perceptual defense short shrift and is roundly criticized by Dixon (1971) for ignoring the mass of evidence for the phenomenon. In his 1976 book, *Cognition and Reality*, which is based in large measure on Gibson's work, he avoids the issue altogether, except as his discussion of attention in Chapter 5 is relevant to the same issues. Neisser and Gibson are certainly justified in rejecting the conceptual muddle of the subliminal perception literature, but curiously, Neisser's own account of "preattentive processing" in his 1967 book involves the same logical contradiction that underlies accounts of subliminal perception. He proposes a rapid kind of pre-processing in perception that is used to decide whether a more detailed "figural synthesis" is in order. But how could such a decision be made without knowing the content of what is to be perceived, and if it is already

known, what could further processing accomplish?

Actually what I am discussing here is not just one paradox, but two. The first and the easiest to resolve is the paradox of tacit knowledge and action and the special case of it called "subliminal perception." In this paper a resolution will be proposed to this paradox in terms of "transparency theory," a view that draws upon Polanyi's philosophy of tacit knowledge, Gibson's view of the nature of perception and findings of contemporary psychophysics.

The second and more difficult paradox is that of self-deception and its special case in the perceptual domain, "perceptual defense." This paradox is a more difficult one to explain and the phenomenon is a more complex one, for it involves all that we encounter in a general theory of tacit knowledge and action, plus one other thing—the phenomenon of resistance. Although there will be some suggestions about this paradox in what follows, an explanation of the resolution of this paradox will not be attempted in this paper. The interested reader is referred to Warner (1982), and also to the outline of some of his arguments that appears in the chapter by Brown, Warner and Williams (1985).

Polanyi's Two Kinds of Knowing.

In his classic philosophy of science book, *Personal Knowledge*, Michael Polanyi (1962) wrote two brief but profound chapters on cognitive theory (Chapters 4 and 5). The work has insights into the subtleties of human cognition that far surpass the current work in information processing. His approach has much in common with Gestalt psychology, but he explains more than perception, and his view of man is more teleological than the Gestalt one.

One of his most important explanations concerns the two kinds of knowing: *tacit* and *explicit*. It may seem unusual that one would propose cognitive theory in a philosophy of science book, but his intention seems to be to show the limits of scientific knowledge. Science deals with

explicit knowledge. The business of science is to produce knowledge that can be specified, verbally transmitted and publically verified. But that is not the only kind of knowledge that is of value to a culture. Indeed, even the art of science itself, the way in which effective science is conducted, is not specifiable but must be learned by apprenticeship.

To clarify what is meant by tacit knowing, he gives the example of the crafts of medieval Europe. The half literate Stradivarius created violins superior to anything that can be produced today, despite our technological advances. Yet one who has this skill would never be able to put it into words. It can only be learned by apprenticeship. For that reason many of the most valued crafts of the past have been forever lost. Similarly, in British Common Law the decision of the judge is often of greater value than any reasons he can give for that decision, for the actual reasons are assumed to be subtle and unspecifiable. This kind of "unconscious," if we wish to still call it by that name, is much different than the kind proposed by psychodynamic theory. Whereas the psychodynamic unconscious is hypothesized to consist of primitive and irrational urges that must be tempered by the rational ego, the kind of "unconscious" we are here describing is in a sense much higher and more rational than our specifiable knowledge, or "conscious" mental life.

This kind of unspecifiability is related to what one has in mind when saying, "I have a clear idea, but I just can't put it into words." Polanyi expressed it succinctly with his maxim, "We know more than we can say." We could refer to this first way knowledge can be unspecifiable as *ineffability*. Polanyi (1962, p. 56) discusses a second way knowledge can be unspecifiable, which he refers to as *logically unspecifiable*. As an example of this he points out that a skilled pianist could certainly identify each of the chords that he plays in a given piece, but may not be able to do it, even to himself, while still playing. In other words, he can focus on

the whole performance or on a part, but not on both at the same time.

There are, then, two ways that our own thoughts, precepts or actions may be unspecifiable to us. They may be ineffable or they may be logically unspecifiable. The concept of something being logically unspecifiable is explained in terms of two kinds of awareness: *focal awareness* and *subsidiary awareness*. In order for the pianist's performance to proceed smoothly, he must focus on the totality, the Gestalt of the piece, as he proceeds, with the particulars being relegated to subsidiary awareness. If he were to focus too intently upon any part, the performance would falter, the sense of context would fail.

When a skilled carpenter hammers a nail (p. 55), he is aware of both the hammer and the nail, but in different ways. He attends through the hammer to the nail. The hammer becomes like an extension of his body, such that he doesn't focus on the feelings of the hammer against his palm, but focuses through them to the contact of the hammer with the nail. The contact of the hammer against the nail is in focal awareness and he is subsidiarily aware of the feelings of the hammer against his hand. The nail is the object of his attention but the hammer is an instrument of attention.

Polanyi's description of language in these terms (p. 57) is particularly insightful. When we read, words become instruments of attention with the underlying meaning as the object of our attention. If we focus instead on the individual words, we fail to get the apprehension of the whole. It is thus possible to read too slowly. We can identify every word separately, but there is no coherence to the whole, and we go over it and over it without comprehension. In Polanyi's words, "all particulars become meaningless if we lose sight of the pattern which they jointly constitute."

He refers to this as "the transparency of language" and describes it in this way:

My correspondence arrives at my breakfast table in various languages, but my son understands only English. Having just finished reading a letter I may wish to pass it on to him, but must check myself and

look again to see in what language it was written. I am vividly aware of the meaning conveyed by the letter, yet know nothing whatever of its words. I have attended to them closely but only for what they mean and not for what they are as objects. If my understanding of the text were halting, or its expressions or its spellings were faulty, its words would arrest my attention. They would become slightly opaque and prevent my thought from passing through them unhindered to the things they signify. (p. 57)

I have briefly summarized five concepts in Polanyi's account of cognition:

- (1) two kinds of knowledge—tacit and explicit
- (2) two ways knowledge is unspecifiable—ineffable and logically unspecifiable
- (3) two kinds of awareness—focal and subsidiary
- (4) two ways we attend—to objects of attention and *through* instruments of attention
- (5) the transparency of language

I will now incorporate these concepts, together with some insights from Gibson's theory of perception and some recent findings in psychophysics, to propose an alternative account of "unconscious mental processes."

The Rudiments of Transparency Theory

Up to this point in this paper I have detailed what I think is perhaps the single most important unresolved matter in psychology—the phenomenon referred to as "unconscious mental processes." I prefer to refer to it as "tacit knowledge and action." It is, as recognized by the "new look in perception" theorists of the 1950s, the issue that brings together areas of psychology as diverse as psychophysics and psychodynamic theory. It extends to the central problems of attention theory in cognitive psychology, to recent directions in social psychology having to do with how we judge the actions of ourselves and others, and to the philosophical literature on self-deception. There are

many manifestations and many aspects of this problem as diagrammed in Figure 1.

In what remains I will outline a general approach to psychology which we have called "transparency theory" (Brown & Williams, 1983; Brown, Warner & Williams, 1985; Brown, 1986) after Polanyi's discussion of the "transparency of language." The theory has applications to perceptual and cognitive psychology generally, as well as fields as diverse as clinical psychology and second language acquisition theory.

To adequately explain the theory and its relationship to the theorists mentioned above would require a number of papers longer than this one. It will be sufficient for my purposes to summarize seven major premises of the theory in contrast to the traditionally received views within psychology (as shown in Table 1, page 31) and briefly explain each.

The first "received" premise to be challenged is the assumption of "atomism," the proposition that the entire sensory array consists of discrete stimulus units and that human action can be understood in terms of discrete response units. It is interesting to note that Charles Taylor has shown in his very influential philosophical treatise *The Explanation of Behavior*, 1964, that teleological explanations of behavior are only circular when one assumes atomism. We are arguing that it is this same fallacious assumption that makes "multiple processor" models appear necessary in accounting for the results of "subliminal perception" studies. We propose that every demonstration of the existence of "unconscious mental processes" or "subliminal perception" rests upon this assumption.

If this can indeed be demonstrated, we have another profound irony. Whereas the thousands of studies of subliminal perception and perceptual defense in the "new look" tradition were intended to empirically verify and defend the concept of an unconscious against behaviorist skepticism, those very demonstrations only have force as arguments of unconscious mental processes if one assumes atomism. That is, the empirical

Table 1. The premises of transparency theory in contrast to the received view.*Seven Received Premises:*

1. Sensory input can be considered as discrete stimulus units and behavior can be considered as discrete response units. (Atomism)
2. Information below the usual threshold level is processed unconsciously. (Subliminal Perception)
3. Perception is determined by the sensory input altered by past experience or learned biases. (Naive Realism)
4. Behavior is caused by or altered by physiologically determined emotional reactions. (Psychologism)
5. There are separate information processing systems for cognition and emotion. The emotional system is faster. (Fragmentation of the Psyche)
6. Dichotic listening studies have had important implications for attentional theory. Although the subject is not aware of what is said in the unattended channel, there is evidence that at least some kinds of information can get through. This is usually explained in terms of a filter that lets some things through and blocks others. (Fragmentation of the Psyche)
7. We think we know the reasons for our actions, but it is illusory. Contingencies determine our choices and we give ourselves rational reasons for why we made them. (Implicit in this view is the premise that intentional action must be introspectable, articulately specifiable.) (Epiphenomenalism)

Seven Premises of Transparency Theory:

1. We do not see or hear discrete "snippets," but we intentionally draw information from the "optic array," "auditory array," etc. Human action is also a patterned whole. Our fundamental mode of perception and action is tacit. (Tacit Holism)
2. There are not sensory thresholds. Detection of a weak stimulus is rather a continuum. Every quantum of light is "perceived," and every minute change in amplitude of sound. (Signal Detection Theory)
There are discontinuities in perception that can be mistaken for sensory thresholds, but they are predictable from temporal and spatial context and the personality and emotive state of the person. They can be used as mirrors of cognitive style.
3. Our purposes are reflected in our perceptions. Perceptions are also responses, an act of will. (Constructive Alternativism)
4. Much of what passes for emotion is more like a nonverbal language by which we accuse, blame and assert. At least some emotion is therefore a response, and act of will. (Agentivism)
5. Every change in the Gestalt is perceived, but parts are not noticed without mental work which takes time. (Physiognomic Perception)
6. Active perception makes some aspects of the sensory array "ground" rather than "figure". The "figure" is in focal awareness and the "ground" is in subsidiary awareness. A change in the ground will alter the percept of the whole, but perhaps not be noticed as a part. That would require attention and mental work. In the artificial situation of dichotic listening, time constraints preclude articulate awareness of the unattended channel but it has an effect on the whole. (Tacit Holism)
7. Most intentional action is tacit, not articulate nor articulable. To introspect what we have done or why we have done it requires mental work of a kind that we seldom do. But even when we do it, our explanations will always be inadequate for the same reasons that we cannot adequately explain any skilled performance—such knowledge is unspecifiable. But that does not mean that the action was not agentive and intentional nor that it was caused by environmental constraints. (Tacit Holism and Agentivism)

demonstrations and arguments only have force from within a behavioristic (or other atomistic) framework. As soon as one gives up on this assumption of atomism, then a divided psyche or a second mind or an "unconscious" is not needed to explain the observations.

The major opponent of atomism within mainstream academic psychology is Gibson (1966). In a paper dealing with Gibson's "ecological optics" theory, Neisser (1977) argues that the revolutionary nature of Gibson's idea has not been fully appreciated, that "his innocent-sounding suggestion that we make a new description of the stimulus would render that whole century of theory obsolete" (p. 17). It seems natural enough, he continues, for psychologists to first consider the simplest experimental situation, a single stimulus and response. He goes on to show that in the case of perception (as well as the learning of nonsense syllables and animal conditioning) the strategy has backfired in that the unnatural and impoverished "punctate stimulus" situation has led to unnecessarily complex perceptual theory.

In a parallel way we propose that if one begins by assuming atomism, it will necessarily follow that he will eventually be pushed by empirical demonstrations to posit something like an unconscious component to the mind, or a filter. It will be necessary to in some way fragment the psyche. He will then conclude that there is adequate empirical evidence for "unconscious mental processes" when that construct is in fact an artifact of the atomist assumption.

But we will begin in another way, siding with Gibson that perception involves active "information pick-up" from a total optic array (or auditory array, etc.) with the apprehension of parts requiring mental work. This last statement is really a combining of Gibson's holistic theory of perception with Polanyi's account of focal vs. subsidiary awareness. We propose that most of what we perceive at any one time is in the background, tacitly apprehended in the service of some other focal goal. For example, in driving a car we focus on only certain parts of the optic array, most of

what we "see" becomes subsidiary background. We will refer to this premise as *tacit holism*.

The second of the received premises, the hypothesis of subliminal perception, is not only a contradiction in terms ("perception below the lower limit of perception"), but it is based on a psychophysical concept, the threshold, which no longer has adequate empirical support. One of the major contributions of contemporary psychophysics in the 1950s and 1960s was to quantify the step function hypothesis of threshold theory (the "two-state" model which proposes a point of discontinuity at which we begin to hear, see, etc.) and the opposing continuous function hypothesis of signal detection theory (the "multistate" model which proposes a continuum of detection from "no signal" up through increasing magnitudes of signal). The psychophysical functions for these two models are shown in Figure 2, page 34. The signal detection theorists (Tanner and Swets, 1954; Swets, Tanner and Birdsall, 1961; Green and Swets, 1966) demonstrated that the "two-state" model gives rise to an ROC curve ("receiver operating characteristic curve") that has two facets with inflection at the "ideal" decision point, while the multistate model gives rise to a smooth continuous ROC curve (which is under certain conditions an "isosensitivity" curve). They found no perceptual data that would fit the two-state ROC curve, but rather all that they tested fit the multistate continuous curve. In other words when the threshold model is made mathematically precise in this way, there are no data to support it.

In a classic study of the minimum amount of light necessary to be detected, Hecht, Shlaer and Perinne (1942) demonstrated that ten quanta absorbed by the retina are sufficient for detection. In a recent update of this work in terms of signal detection theory, Sackett (1971, 1974) has demonstrated that retinal absorption of a single quantum is sufficient for detection to take place. Actually this could have been anticipated from the signal detection theory demonstration that

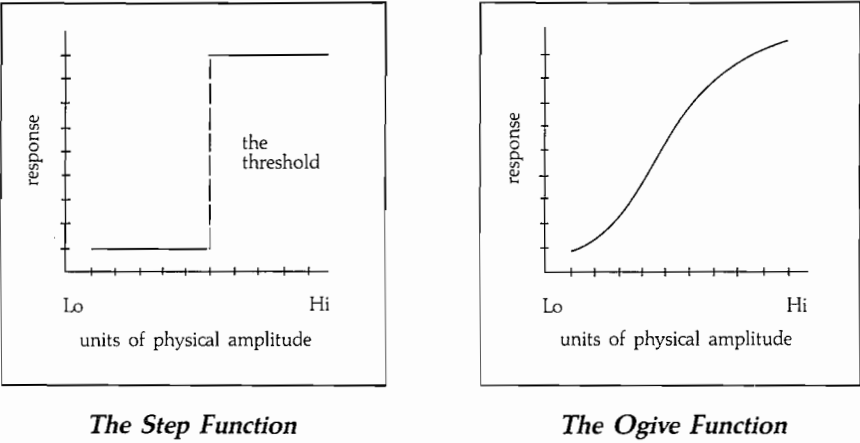


Figure 2. A comparison of the step function of threshold theory with the ogive function of multistate theory.

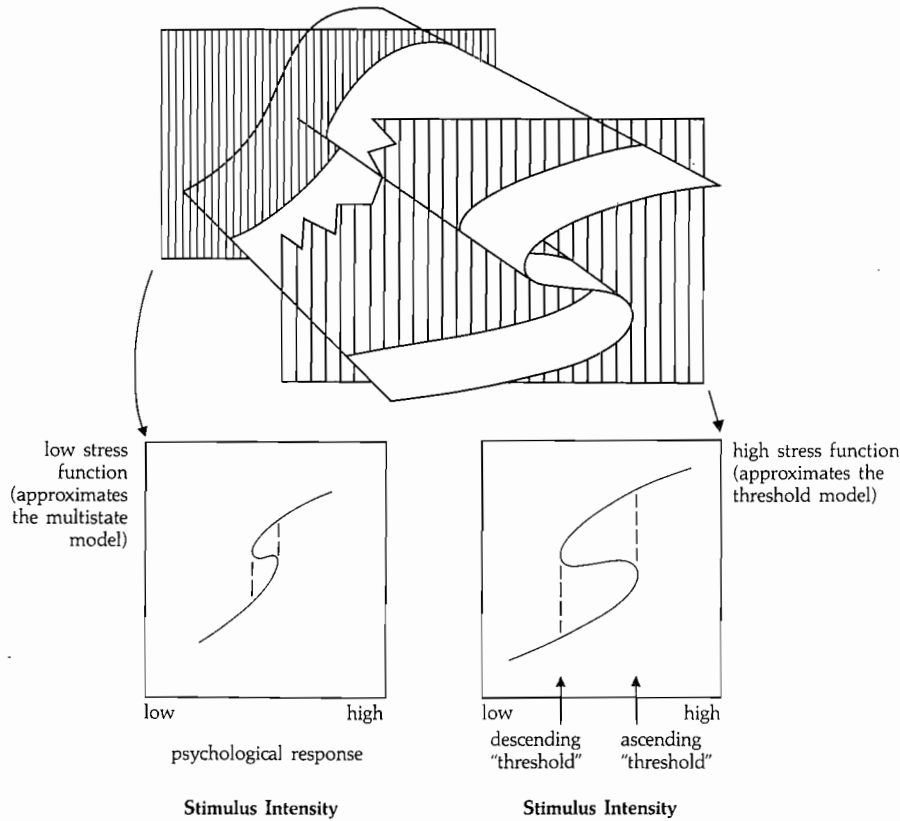


Figure 3. The cusp catastrophe as the general case incorporating both the multistate model and the threshold model.

there is no psychophysical evidence for a threshold. If detection of a weak stimulus is a continuous function of amplitude rather than the step function posited by threshold theory, any increase is enough to be detected given enough signal and noise trials. It becomes a statistical problem of probability to show detection of a weak stimulus rather than a perceptual one.

But the classical psychophysicists had good reason to take the concept of a threshold seriously. When one arranges weak stimuli in an ascending or descending series (the method of limits), it *subjectively seems* that there is a point of discontinuity, a place where the present stimulus seems noticeably louder than the ones before, even though the series are equidistant in amplitude. The ascending series has a different "threshold" or point of discontinuity than the descending series. For years psychophysicists have just averaged these, but the distance between the two is in fact much more interesting than their average. Using a three-dimensional model called the "cusp," one of the seven fundamental surfaces in Thom's (1975) topological system that is called Catastrophe Theory, Inouye (1978) has demonstrated that the distance between the ascending discontinuity (or "catastrophe" as Thom calls them) and the descending one is much different for schizophrenics than for normals. Earlier psychophysical studies of schizophrenia had failed in the expectation that schizophrenic thresholds would differ from normal, but with the Catastrophe Theory approach Inouye has shown that schizophrenics do differ psychophysically from normals. They persevere more. The distance between their ascending and descending points of discontinuity is greater. It has also been demonstrated that a normal person under stress has a greater interpoint distance than when not under stress.

The cusp catastrophe is nothing more than a three dimensional surface with an ogive "lazy S" curve at one end and a "hard S" at the other as shown in Figure 3, page 36. It is geometrically the general case of

which both the threshold model and the continuity model (shown in Figure 2) are special cases. The continuity model is, of course, identical with the lazy S end of the surface, and the hard S end has two thresholds, one as one ascends from left to right (as shown in Figure 3) and one as one descends from right to left. The "high stress" function (a cross section from the surface) shown in Figure 3 is characteristic of schizophrenics and the "low stress" function (the second cross-section behind the first in Figure 3) is characteristic of normals.

We amend our position, then, to say that there is a threshold (or rather multiple thresholds), but it is cognitive rather than sensory. Thresholds are a mirror of emotive state and cognitive style. What has been discovered is no more than an example of the complementary perceptual processes of assimilation and contrast put forth years ago by the Gestalt psychologists, but this time with a topological way of predicting when assimilation (not noticing a difference) will occur, and when contrast (exaggerating a difference) will occur. And it becomes a useful index of personality and psychological state.

Gibson has made a profound contribution in providing the concepts to begin the work of a holistic analysis of perception, but it is not altogether clear how to turn his concepts into experiments. The topological surfaces of Catastrophe Theory provide a way of making precise predictions about the ways in which judgments are predictable from spatial and temporal context. They are qualitatively precise parables, or "canonical forms" that can be directly tested in perception research as well as in person perception from voice research (as outlined by Brown, Warner & Williams, 1985).

Our objection to the third received premise which we have pejoratively referred to as "naive realism" is in one way parallel to Gibson's objection. He also has rejected the traditional typification of perception as "sensation colored by conception or past experience." But our proposed alternative premise is one of the

places where we most differ from Gibson and from Neisser. Gibson does move us forward from "information processing" (as though information were pushed through us) to "information pickup" (an active selecting perceiver), but he doesn't specify how it happens. As Hamlyn (1977) has pointed out, although Gibson moves in the direction of active holistic perception, he finally leaves the self, the agent, the perceiver out of perception. In his description of information pickup he claims that the senses functioning as perceptual systems "can obtain information about objects in the world without the intervention of an intellectual process" (Hamlyn, 1977, p. 13). This leaves one hard pressed to extrapolate Gibson's theory to abnormal psychology. He deals only with veridical perception, certainly not that which is "pathological." Neisser (1976) also admits the Piagetian concept of a perceptual process of accommodation (altering schemata to fit incoming information), but not the complementary process of assimilation (altering incoming information to make it fit preexisting schemata), and is also therefore not able to account for pathological perception.

But the alternative premise that we offer is much more radical than just including Piaget's concept of assimilation. We are not proposing that the person's perceptions are altered according to existing intentions, beliefs, etc., but that they are acquired in the first place in a form that reflects intentions, beliefs, etc. That is, we are proposing that our perceptions are a reflection of personality and that they are an act of will, every bit as much a response as an input. We are agreeing with Gibson in rejecting the view that perceptions are just sensations colored by past experience and bias, but we differ from him in our insistence that the particular information that will be picked up and even the way it is experienced will be different for different persons, it is a reflection of intention, personality, and cognitive style. The perceptual or sensory experience in its rawest form is already an expression of the person and the person's state as

demonstrated by Inouye (1978) in the psychophysical studies referred to above.

Although this is a radical proposal it is not without precedent in the clinical and philosophical literature. A number of theorists (Kelly, 1955; Rychlak, 1981, p. 466; Warner, 1982) have also proposed that we can choose to construe our circumstances in a number of ways ("constructive alternativism," Kelly called it), and much else will be determined by that particular choice. Kelly's personality test, the REP test, is based upon the premise that we can best understand a person by understanding how he views significant others. This kind of perception, the way a person perceives another person, is at the highest level of what could be referred to as perception, whereas the psychophysical demonstration is at the lowest, but we are proposing that at both levels and everything in between the person and his intentions are written upon the way he perceives. We see things as we are, not as they are.

The fourth premise of transparency theory is somewhat like the third. We are proposing that many emotions, like perceptions, can productively be considered as response rather than a cause of response. The psychologistic view of emotions has them as biologically based reactions that cause behavior: "His anger caused him to do it." Although we will concede that many emotions, such as fear or grief, are very much toward the automatic reactive side and have a strong biological basis, others like anger and depression can be better understood as a kind of intentional nonverbal message. Anger can accomplish a number of things. It can be an effective way of accusing another since it is an intentional message that poses as involuntary (Warner, 1982). And, as Solomon (1977, p. 284) has argued, "anger is a great equalizer, judging one's antagonist as an equal. To be angry with a child is to treat him as an adult . . . to be angry with a superior is to raise yourself to his level." Likewise depression can have instrumental uses. This approach to the emotions can have important implications for nonverbal

communication research (Brown, Warner & Williams, 1985).

The fragmentation of the psyche by the "information processing" psychologists had become quite complete by the 1980s. Not only do they posit conscious and unconscious processors, but also separate systems for cognition and affect, and evidence has it that the affective system is faster (Zajonc, 1980). We propose that the same results can be explained alternatively in terms of a part/whole distinction and that what Zajonc has demonstrated is that the most primitive and fundamental kind of perception is holistic, that it takes mental work to notice parts (premise 5).

The Gestalt psychologists noticed this phenomenon long ago and referred to it as "physiognomic perception." The basic idea is that we do not look at a face and notice the glaring eyes, the grinding teeth, the red flush and conclude that the person is angry, but rather the impression of anger is immediate and unmediated and the component parts are only noticed afterward if at all. "We must assume that features like 'threatening' or 'tempting' are more primitive and more elementary contents of perception than those we learn of as 'elements' in the textbooks of psychology" (Koffka, 1928, p. 150). Likewise, the statistician Chernoff (1973) has shown that complex multivariate data can be apprehended much more quickly in the form of stylized human faces than in traditional graphs. The Gestalt of a human face has an immediate, tacit meaning that precedes any notice of parts.

Rather than positing a fast emotion-processing system and a slow cognitive one, the empirical evidence can be explained by saying that perception is essentially tacit and holistic and that explicit notice of elements and parts requires mental work. In a recent voice study Feldstein and Bond (1981) demonstrated that when subjects are given the task of judging the speech rate of voices that are in fact equivalent in rate but vary in terms of frequency and intensity, they will judge higher frequency voices to be faster and higher intensity voices also

to be faster. (See also Bond and Feldstein, 1982.) But we would argue that judging rate or intensity or any other single feature of voice is not a very natural thing for a person. The impression from voice is much more global. When pressed for a judgment we can make it, but the dimension we think we are judging may not at all be the one the experimenter is varying. Such attention to a part requires mental work, but it will not be very accurate without practice and feedback.

We are now ready to deal with the contradictory results of the dichotic listening studies (premise 6). Whereas Treisman (1964) provides evidence that the subject cannot even accurately identify the language in which the unattended words are spoken, Lewis (1970) gives evidence of full semantic processing of the unattended channel. The two seem contradictory, but this is exactly what Polanyi would expect on the basis of this concept of the transparency of language. It is not necessary to notice words or even the language identity of the words to have an apprehension of the meaning. Skilled reading involves attending *through* the words (the instruments of attention) to the meaning (the object of attention). (See Brown, Inouye, Barrus and Hansen, 1981.)

In the Lewis (1970) study, the subject is not able to identify specific words from the unattended channel (they are not in focal awareness) but rather it is shown that synonyms slow down his reaction time. In an atomistic analysis of the situation the results are mysterious. We have evidence of a stimulus affecting the person's response without the usual awareness of having been perceived—presumably it was processed unconsciously. In a holistic analysis it is simple—an unnoticed part can alter the apprehension of the whole. The fragmentation of the psyche into conscious and unconscious processes is a natural result of considering perception in terms of discrete stimuli rather than a patterned whole.

One can argue that the whole cognitive psychology enterprise called "attention theory" is a way of patching up the mistaken premises of 50 years of

behaviorism. As Kahneman (1973, p. 2) has confessed, "Indeed, the main function of the term 'attention' in post-behavioristic psychology is to provide a label for some of the internal mechanisms that determine the significance of stimuli and thereby make it impossible to predict behavior by stimulus considerations alone."

Likewise, we need not conclude from the evidence reviewed by Nisbett and Wilson (1977) that because our attributions of reasons for our choices and actions are in error, that the actions are in some way "caused by behavioral contingencies" or are otherwise nonintentional (premise 7). Most intentional action is tacit. To try to articulate what we have done or why we have done it requires mental work, but will always be inadequate.

Consider a misunderstanding between a husband and wife. Usually the two will not agree afterward as to what caused it, what part each played, and in general what happened. A great deal of what happens is tacit and involves nonverbal communication. Even if the couple agree as to what happened, their agreement and their description will have a strong note of arbitrariness to it. An interpersonal occurrence of that kind is a very subtle thing, only a small part of which can be summarized with words. To summarize it requires mental work, and there are many such possible summaries, each distorting or missing much of what really happened even as it clarifies. So also, any person's description of himself or even of another person is an attempt to put what is essentially global and tacitly experienced into a package of a few words. Even an insightful characterization will distort and fall far short even as it may capture a part in explicit language.

Summary.

In this paper I have reviewed some of the objections to the psychodynamic model from the existentialist philosophers and argued that they have adequately demonstrated that the psychodynamic explanation of repression fails on logical grounds. I have also tried to show that

many contemporary cognitive and social psychological models are also based on a two-agent or split-psyche form of explanation and can be faulted for the same reasons. Like the psychodynamic model, they also lead to paradox, and of course it makes no sense to look for empirical confirmation of a theory or model that is logically contradictory. In the last part of this paper I have outlined an alternative account of the empirical findings that are often used as evidence for unconscious mental processes. I closed the paper by spelling out seven premises of this approach in contrast to the received view.

Sometimes even after I have given the contrasts between "them" and "us" that are displayed in Table 1, someone asks if the transparency theory approach is really anything more than exchanging the words "tacit vs. explicit" for "unconscious vs. conscious." In summary I will mention four major differences between the transparency theory view and the currently received view in cognitive psychology:

(1) The information processing view is like the psychodynamic one in that it involves a split psyche, two agents in the head. Of course they do not describe it in those terms, for they are using a computer metaphor and talking about "processors." But once all of the evidence is in, the "filter" must have all of the discriminative properties of the "central processor", the conscious mind. They have in effect a two agent model. Our explanation involves only one agent and explains the "nonconscious" nature of some inputs in terms of the structure of the act being carried out by the person rather than bifurcating the mind into a conscious component and a non-conscious component.

(2) The received view in cognitive science considers "processing without awareness" to be some kind of discovery or anomaly with the usual case being explicit awareness of and a veridical registering of all that one perceives. This is, of course, also true of psychodynamic theory: the Unconscious is viewed as some kind of major scientific discovery that waited for the dawning of the twentieth century. It comes as a kind

of revelation to modern man that there is much more lurking in the depths of his mind than he had ever supposed. But we argue that the Unconscious is an artifact of mistaken assumptions rather than a discovery. It is a product of misreading the nature of resistance in the primary clinical observations. Likewise, the empirical demonstrations of unconscious mental processes are an artifact of assuming atomism. In contrast, transparency theory holds that our primary mode of perception is tacit and holistic, such that it requires some mental work to notice components of the perceptual Gestalt or to make them explicit. Apologists sometimes use eye-blinking, breathing, or heart beating as evidence for the existence of unconscious processes. But that is using the word too broadly. One certainly wouldn't credit Freud with discovering that kind of unconscious process.

(3) If one wishes to refer to Polanyi's concept of tacit knowledge as "unconscious" it must be recognized that it is a very different kind than what Freud describes. The Freudian one is primitive and irrational, the "pleasure principle" rather than the "reality principle." But Polanyi describes tacit knowledge as super-rational, much subtler and wiser than that which we can make explicit. Indeed he characterizes the great challenge of science as seeking to make explicit more and more of the wisdom of tacit apprehension and the subtleties of skilled performances.

(4) The "two-agent" explanation has the effect of cutting off inquiry, or at least pointing it in unproductive directions. Once you have said that the person took in the information unconsciously (thus attributing the inability to articulate the information to the structure of the person's mind) where do you go next? But if instead the reason for the person's inability to articulate the information is to be found in the structure of the act being carried out or within the structure of the perceptual information available to the person, we have a challenge to understand that structure and explicate why some aspects of a performance or a perception are articulable and some are not. We are well on our way to an adequate psychology of skills.

Recently transparency theory has been applied to the growing literature on second language acquisition (Brown & Williams, 1983; Brown, 1986). It provides a theoretical justification for many of the major second language observations of the past twenty years. For example, the concept of "objects of attention" vs. "instruments of attention" is foundational to the observation that one acquires language skill much more efficiently if the language is used as a tool in doing something else rather than being the focus of direct study. The old psychodynamic concept of unconscious is a "tack on" as far as language learning theory is concerned, it leads to no such insights.

It took us fifty years in the development of American psychology to see that behaviorism was going nowhere. Hopefully it won't take another fifty for us to see that excessive mentalism justified by a computer metaphor, with multiple processors in the mind, also isn't going anywhere. I am of the opinion that the major reason psychological theory has progressed so slowly and been of so little help with our practical problems is because it has been plagued by heavy, occult explanatory burdens like the so-called "unconscious mind" and by mistaken assumptions like atomism.

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