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Residual Asymmetrical Dualism: A Theory of Mind-Body Relations

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Progress in understanding the mind-body problem can be made without attempting to solve it as one unified problem, which it is not. Pepper's "Identity Theory" solution to the problem is now seen as not necessarily clarifying for the question of dualism. Residual asymmetrical dualism is proposed as a theory offering one very good way to think about this set of problems in a variety of modes of inquiry. These include neurophysiological research on the amygdala by LeDoux, research in the phenomenon of hearing and learning while under general anesthetic, Gendlin's methods of focusing upon the body during therapeutic procedures and during creative composition of poetry, and Dewey's position concerning "primary experience" versus a "secondary pseudo-environment" inhabited by the civilized human. Residual asymmetrical dualism is not a value-neutral theory: it is based on a determination that bodily intelligence must ultimately guide mental functioning if survival and well-being are to be secured. It leads to taking actions within society to carry out whatever steps are needed to alleviate the mind-body split whenever such a split is harmful to human interaction.

In a previous article (Efron, 1980), I proposed the terms *residual asymmetrical dualism* to describe the position taken by D.H. Lawrence regarding the mind-body problem. In his far-ranging and so-called "Study of Thomas Hardy," Lawrence claims that there is an "eternal non-marriage betwixt flesh and spirit" (Lawrence, 1936, p. 473) but despite this, the Study ends with an image of the woman and the man, lovers, in a kind of rare union, so difficult to achieve, in which the eternal non-marriage is dissolved for a time in an

My thanks to Mary Galbraith for persistently bringing the work of Eugene Gendlin to my attention, and to Michael Simmons for the reference to Eames (1964). William P. Benzon has helped guide me through the hazards of brain research literature, although any errors committed are my own. Henry Bennett kindly provided key references for the section on hearing under anesthesia. A small part of this paper was presented at the conference of the International Association for Philosophy and Literature, held at UC–Irvine, April 26, 1990. I am indebted to Tim Gould for his comments there. Requests for reprints should be sent to Arthur Efron, Ph.D., Department of English, State University of New York at Buffalo, Buffalo, New York 14260.

experience of mind-body unity within each and between each. Lawrence's vision is thus comparable to that of Wilhelm Reich, who was also a focal point of my 1980 article, in that both of them consider a major unifying process of mind and body to occur only in the minimal social dyad of the lovers. Reich's "function of the orgasm" (Reich, 1942/1973) does not occur unless it occurs with two people in carnal embrace.

I selected the three terms, residual, asymmetrical, and dualism, because these appeared to be the indispensable, minimal terms needed to deal with the complex and multiple relations between mind and body. These are the terms underlying Lawrence's analysis of the multiplicity of mind-body relations; they are also the terms I wish to apply to my own sense of the mind-body problem. Each of the three is necessary for a credible theory of mind-body relations:

dualism: because that honors the persistent evidence in experience that mind seems disposed to somehow oppose body (or vice versa), the feeling, in other words, that impulse is closer somehow to body than is impulse-control, which is closer to mind;

asymmetrical: because even though a powerful need or disposition in favor of creating a felt unification of mind and body does exist, this unification has, or ought to have, its grounding in the body as the element that should condition mind, and guide it to think along lines of survival for the organism and for fellow organisms. Such thinking would be in the tradition of the body as the locus of emotion. Thinking guided by bodily intelligence would ensure that choices made by the mind would be grounded in the emotional realities of the self. "Asymmetrical" as I employ the term does not refer to the dual hemispheric organization of the brain, but to a deliberate valuation of body as the guiding force, a "thinking of the body" within whatever mind-body relationship we could achieve;

residual: because the unification is temporary; the split in one form or another re-occurs easily and inevitably. The only question, insofar as this split does occur, is: How can it be controlled?

I am not entirely sure that Lawrence would have approved of my formulation of his position but at this point I am willing to take that description over as my own. A tentative appreciation of residual, asymmetrical dualism may be gained through consideration of a common sequence of phases of experience. In one phase, the subject has the realization that what she or he has been thinking, with regard to a certain position or idea, is seriously at odds with what her or his body feels regarding this same idea or position. In the second commonly experienced phase, a difficult adjustment is made, leading to a felt sense that the thought (concerning an idea or a position) is no longer at odds with what the body feels. These two phases may be taken to represent asymmetrical dualism. The residual, dualistic factor occurs in a

subsequent phase of experience during which it becomes apparent to the subject that mind-body synchrony is once again absent. This is the series of feelings and thoughts in the self which was the basic consideration of the earlier article (Efron, 1980).

Yet a large part of my earlier article I would now wish to set aside, perhaps even to abandon. This is the part in which I attempted to refine and defend a version of the Identity Theory of mind-body relations, developed by Stephen C. Pepper (Pepper, 1967). I have not changed my mind about what I said concerning this theory: it should become a mind-body theory proper, and not a mind-brain one. Philosophers seem not to have changed very much in this regard; most are comfortable in debating the mind-body problem as if the brain were the same thing as the body. Thus Thomas Nagel, for example, can affirm that "the connection between mental life and the body is very close, and that no mental event can occur without a physical change in the body—in vertebrates the brain—of its subject" (1986, p. 28). The traditional mind-body problem, as Nagel conceives of it, and as most practicing philosophers would agree, is the problem of "the relation between mental processes and brain processes" (p. 32). Nagel is therefore attracted to the allied notion that the human self is actually the brain (p. 40). He speculates that through "some monstrosity of genetic engineering" it might someday be possible to produce a brain that has never been located in an animal or human body but which is nonetheless "an individual subject" (p. 40). But this is to ignore even our present knowledge of how brain centers themselves are only developed in relation to body processes and are conditioned continually by body experiences. The Identity Theory as defended by Pepper might not be foolproof against this kind of reduction toward a purely brain theory.

A more important reservation about the Identity Theory, however, and one that would apply even to my revision of it as a genuine mind-body theory and not just a mind-brain relationship, is that it probably cannot do as much theoretical service as I had expected. The modern form of the mind-body problem since Descartes is, as Pepper and others have thought, how to reconcile and unite two accounts of what goes on in the mind: the introspective report, and the account given by physiological and neurological sciences of the brain and body. But perhaps that problem has been wrongly approached by the Identity Theory. Even if it could be proven that in a strong version of the Identity Theory the two accounts are actually referring to precisely the same mind, would this be a definitive argument against dualism? It would not, if what these two accounts unify is actually a description of mind-body conflict, whether in one hemisphere or in both, or between both, or between the higher cognitive functions and the emotional needs. Identity thus conceived might only show us a better image of duality.

There is no one such thing as *the* mind-body problem; there is a whole group of problems whose interrelations continue to shift (Efron, 1980). But this is not only a sign of intractable difficulty. It is also a field of inquiry which permits us to move freely among different members of this group of problems, whether in terms of love-relations, brain neurology, medical research, ethics, or to historical movements such as the sexual revolution, a movement that is not a chance occurrence of the 1960s but a long-term development toward human self-regulation rather than regulation in deference to authoritarian standards (Efron, 1985). In each inquiry, it will be instructive to think of residual asymmetrical dualism in operation. At the present stage of mind-body inquiry, there is no possibility of uniting all of these into one grand theory, but there is the opportunity for corroborating residual asymmetrical dualism from many angles. Corroboration is all we are going to get, for some time, in this field of inquiry. It is useless to wait for the emergence of some essential new concept that would link the physical and the mental but would itself be "neither mental nor physical" as Nagel advises (1986, p. 48). There already is good theoretical ground, based on Pepper's conception of evidence, to take corroboration as a strong indicator of validity (Lee, 1983). In the present paper, I will discuss four possible corroborations: recent research by Joseph E. LeDoux into brain neurophysiology; evidence from some peculiar memory-effects of patients undergoing anesthesia; the psychological-philosophical work on body "focusing" developed by Eugene T. Gendlin; and the notion of "primary experience" in the philosophy of John Dewey.

Philosophical Debate and the Persistent Human Problem

In philosophical discourse, it is possible to mount the most seemingly perfect logical argument on the mind-body problem and predict that someone else, with equally impeccable logic, will refute that position. Probably the reasons for this situation are in the nature of attempting to use verbal language to describe relations some of which have been encoded non-verbally within the human organism, or so I would say so, after reading LeDoux. Probably too, a reason for the continual failure of the mind-body "solving" arguments in philosophy has been the very same detachment from affect with which such discourse is normally pursued: without contact with emotional reality it is impossible to maintain contact with the bodily aspects of the problem. Which is to say, it is impossible to properly consider the problem, since the removal of its bodily character will distort any thinking about it. Finally, the persistent failure to resolve (not "solve") the problem is also due to setting unrealistic and humanly unnecessary goals: accounting for all mental activity, down to the briefest image or individual word, in terms of

body process, or first defining the mind as a macrocosm of "consciousness" and then demanding that a solution to the mind-body problem consists in showing how consciousness can be explained as a result of physiologically conceived brain processes. "How could the aggregation of millions of individually insentient neurons generate subjective awareness?" So asks the philosopher Colin McGinn (1989).

Now McGinn obviously does not expect an answer. Indeed for McGinn there is no loss if there is no answer, since he sees no important issue involved for human interaction. The "problem" cannot be solved, but according to McGinn, this need not trouble us. From the perspective of residual asymmetrical dualism, however, there is something vital at stake: as articulated by Reich, who gives this theory its pragmatist guideline, the goal is not to "solve" the whole phalanx of mind-body relations, but to arrive at some clear policy for dealing with mind-body relations in human life, and especially with the split or duality at those points at which it is harmful to human relations (1972, p. 354).

LeDoux's Research into Emotional-Cognitive Connections

One area of mind-body relations that now seems especially promising is that of "cognitive-emotional interactions in the brain." The phrase is in fact the title of a key article by the neurophysiologist and brain researcher, Joseph E. LeDoux (1989). Let us (tentatively) take "cognitive" to mean "mind," or at least closely associated with mind, and "emotional" to mean "body," or closely associated with body. This is not simply an arbitrary assignment of terms; not only is there evidence of the adrenaline flowing in an emotional experience, there is also evidence we can each confirm in our own bodily sense of emotional experience. The challenge offered by A.C. Papanicolaou in his work, *Emotion: A Reconsideration of the Somatic Theory,* is worth taking up at this point:

> First, try to recall a single instance when an emotion (an erotic desire, for example) was experienced in the absence of somatic sensations. If memory cannot be trusted on this point, try to create in the present an emotional experience, any emotional experience whatsoever, by whatever means, making sure though, that your body remains completely calm throughout. No matter how and how long you try, you are bound to fail at this task: You may summon a variety of images that you expect should excite you emotionally. Yet they leave you unmoved. If one such image does succeed in provoking an emotional experience, you will immediately realize it did so only because it succeeded in invoking a host of somatic sensations. (1989, p. 13)

It is well to consider this reminder of the bodily nature of emotion because LeDoux's concentration on brain processes tends to make us forget it. LeDoux would be among those mind-body thinkers whom Papanicolaou would regard

as having fallen victim to the "cerebrocentric" theory of emotion that has been the reigning model in the research field for some fifty years.

It is not clear how sure we can be about what LeDoux is telling us, given the hazards of mind-body theory construction based on neurophysiological findings. Possibly, brain physiology merely provides a basis for the construction of a new kind of "brain mythology," in which we imagine how our minds function. Theories of the brain have an annoying habit of proving to be much less tenable than they are first supposed to be. The theory of the "triune" brain (MacLean, 1949, 1952), with a phylogenetically older reptilian core lying beneath two more advanced brain layers, has by now been questioned, LeDoux reports, by later researchers who can find no very good basis for it (LeDoux, 1989, p. 269). The spate of "bicameral consciousness" theories of the 1970s has now abated. There is evidence, for example, that images, which had been supposed to have been created by the brain's right hemisphere, are actually created in some conditions in the left side; in fact, there does not seem to be any one location for images (Goleman, 1986). Walker has compiled numerous brain research articles which now thoroughly modify and discredit any rigid allocation of different tasks and functions to the two hemispheres of the brain. This is not to deny the existence of a large speech center on the left side, but it is to deny the claims made for mental dichotomies based on the location of this center (Walker, 1990).

Still, LeDoux has found something; there is some impressive evidence here that will not just go away, whether we call it science or mythology or some of both. What LeDoux has found is that complex emotional reactions to perceptions occur a split second (.04 seconds) before the neocortex proper has any chance to work on them. Before either the neocortex or the hippocampus (another area of the brain where it is *now* believed that cognitive thinking goes on) receives perceptual information (whether from memory, from the internal body, or from the outer environment), the information has already been processed in such a way as to produce an emotional evaluation. This work goes on, it strongly appears, in an area of the brain whose functioning has only come to be understood in the past twenty years, namely the *amygdala*, an almond shaped organ, a "subcortical forebrain area," located in each hemisphere. LeDoux's work is probably the most advanced research on the workings of the amygdala. The 500 page book, *The Amygdaloid Complex* (Ben–Ari, 1981), marks a notable symposium on the subject. There are also two chapters on the amygdala and emotion in Robert Plutchik and Henry Kellerman's compendium (1986) of research and research problems, *Emotion* (Aggleton and Mishkin, 1986; Fonberg, 1986).

The amygdala does not perform as a reflex; it does not merely inject emotion into a percept, but creates an evaluation (or a "computation," as it is now called). Without our being aware of the operation of this part of the

brain, it performs the evaluative function of telling the brain whether something is, say, dangerous, or pleasurable. Moreover, in humans and in other higher mammals, the amygdala has memory, emotional memory: it can know that the snake perceived this instant is dangerous, if it has already learned, through past experience, that snakes are dangerous. The amygdala will evaluate the snake accordingly, even though it does not possess more than a minimal understanding of what a snake is. This emotional experience center, the amygdala, is therefore performing a cognitive function, even if in a somewhat crude way.

The question of how the amygdala acquired this memory is important for asymmetrical dualism because the amygdala is completely formed at birth, whereas the full maturation of the neocortex takes more time to develop. Some of what the amygdala has learned would have to have been acquired before the development of the higher centers. As LeDoux points out, this would shed light on the old question raised by Freud, of why we have childhood amnesia. The reason is not "repression," but a lack of similarity between the mode of thought employed by the neocortex and that employed by its earlier-developed source of emotional knowledge, the amygdaloid complex. The thinking of the body has a head start, as it were, but such thinking does not employ language, at least in the initial stage.

"This view," according to the simplified account in the *New York Times*, "is a direct challenge to the prevailing wisdom in psychology that emotional reactions follow from thoughts about a situation" (Goleman, 1989). The oversimplification here resides in the ambiguity of the term "thought," since in some sense the amygdala does think; we just are unaware that it is thinking. But, to preserve our tentative distinction of cognitive=mind, emotional=body, we can still say that conscious thought in the neocortex is not the same sort of stuff that goes on in the amygdala. It is more like what we usually think of as thought. On the other hand, the amygdala functions appear to give some new meaning to the old phrase, "the thinking of the body." It now appears to be the case that, contrary to what William James supposed when he formulated his famous somatic theory of the emotions (James, 1884), there *is* a special emotional system in the brain, one that has memory and cognitive capacity, and which has neurological links running in both directions between itself and the neocortex as well as to the thalamus and other brain regions (LeDoux, 1989, p. 268).

This picture of the brain (or this brain mythology) takes on a more dualistic form when we add further details. Both the hippocampus and the amygdala have nerve pathways from the thalamus, the area which serves as a set of relay stations for incoming sensory impulses, but, as LeDoux puts it, "The amygdala is just one synapse away from the thalamus, while the hippocampus is several additional synapses away" (quoted in Goleman, 1989). The hip-

pocampus is receiving the same information, but from two sources, one of which is just a twenty-fifth of a second behind the other. The so-called thinking part of the brain can thus form its judgment, based on its own delayed input and its input through the amygdala. To make the picture neater (I do not know if anyone explicitly says this, but it seems to be implied), the slower pathways of the thalamus present it with information that is *not* emotionally evaluated.

Now earlier theory of brain functioning had recognized that there could be an emotional "coloring" or tone to perceptions, but it had not adequately considered the evaluative function. Eccles, for example, recognized as "a common experience" that "the conscious perception derived from some common sensory inputs is greatly modified by emotions, feelings, and appetitive drives." However, Eccles held that the prefrontal cortex should be regarded as "the area where all emotive information is synthesized with somaesthetic, visual and auditory [information] to give conscious experiences to the subject and guidance to appropriate behavior . . ." (Eccles, 1978, pp. 176–177). LeDoux's research indicates that the subject is being given some of its guidance from an area that has received and evaluated the information prior to its arrival in the prefrontal cortex.

Is this situation necessarily dualistic? Let us say that it provides a minimal basis for a dualistic organization of the mind. (I am deliberately using the term "mind" here, though aware that "brain" and mind are not the same thing; there is enough implication from the amygdalic research data to make this leap, at least for the purposes of the present paper.) Let us further say that *if* all channels and areas are working in harmony, *if* there is ample integration of the signals from both the amygdalic and non-amygdalic channels, then dualism as a structural feature of brain functioning is insignificant: the "residual" factor is negligible.

LeDoux himself has not been eager to propound a dualistic theory of mind. In his earlier work, he attempted to bring out not how split the brain is, but how integrated its functioning is. In his doctoral dissertation, LeDoux reported on the case of a unique split-brain patient, who, contrary to the more extreme types of theory of the dual hemispheric organization of the brain, "had equal linguistic comprehension skills in his two hemispheres, although only his left hemisphere could talk." This patient "was able to spell his answer to personal, subjective questions directed to the right hemisphere" (LeDoux, 1978, pp. 5637–5638). The patient may have had "double consciousness," but he did not have a mind in which one half of the brain handled all the verbal skills and the other one had almost none. Similarly, LeDoux opposed the theory of "mental duality" argued on the basis of split brain data (and other considerations) by the philosopher Roland Pucetti, in a disputation between Pucetti and numerous adversaries in the journal *The*

Behavioral and Brain Sciences (Pucetti, 1981; LeDoux and Gazzaniga, 1981). Pucetti's "duality" is actually an extreme dualism, in which he maintains that the two halves of the brain are so different from each other that they are best thought of as each housing a different person. This two-person mind is probably a logical outcome of the split-brain theory, rigorously pursued. Here dualism is not residual. It is not a quality of mind-body relations that remains embedded in the human organism but which is greatly diminished or even effectively eliminated under certain optimal conditions. In Pucetti's formulation, there is a total mind-body split.

The residual asymmetrical dualism theory does not accept such a split, but it does require a sub-hypothesis, which may be introduced at this point. Let us hypothesize that the integration of signals from and to the amygdala with signals from and to the hippocampus, neocortex, and thalamus, does not always occur at optimal functioning value. I am not referring to the effects of organic brain lesions, which is what brain researchers can study. Let us suppose, with Wilhelm Reich, that all physiological processes may be disturbed if their rhythm is interfered with by the process of armoring. Based upon his clinical research, and on his understanding of the ways in which armoring disfigures human interaction, Reich designated the normally acculturated person *homo normalis*. Such a person can function in society and yet be seriously disturbed. Remember that Reich postulated (or I would say, discovered) two functionally equivalent types of armoring, muscular armoring, in which body is palpably disturbed, as in shallow or a-rhythmic breathing and abnormally stiffened belly, and character armoring, in which thought processes are rigid and disconnected from feelings, especially pleasurable feelings (Reich, 1942/1973; see Herskowitz, 1986, 1988, 1989). The brain itself exhibits a pattern of very slight oscillation, in which it contracts and expands in a rhythmic pattern. The Reichian therapist and researcher, Charles Konia, has written extensively on brain pulsation and on the understanding of brain functioning that an updated Reichian approach would give us (Konia, 1982a, 1982b, 1983a, 1983b). From a Reichian point of view, it is to be expected that such oscillation can be disturbed within the civilized human being.

The hypothesis of unlimited potential disturbance will support the assumption that the integration of different brain functionings can also be disturbed and, specifically, that the slight gap in time between amygdalic and thalamic reception will be heightened in some significant way; this might even occur through an outright increase in time-lapse. There is much indication by now that different people's brains become organized in somewhat different ways (Gazzaniga, 1985, pp. 117–135). More likely the disturbance might come about through amplification of the lapse as a positive value in the psychological character structure of the person. Conceivably, even the effects of strong commitment to that model of emotional experience, in which "thought"

controls emotional response, would have led to an amplification of this very kind. The strong believer in mind over body may succeed in disturbing the relationship of amygdala to thalamus or neocortex or hippocampus (that is, to any of the other brain centers) by amplifying the difference between the two reports so that the emotionally evaluated one comes in later, when it is too late to make use of it in the situation, or weaker—so that it can be drowned out by conscious commands. Or both.

This is not to say that there is never a good reason to exert cognitive control over the projections sent by the amygdala to the other thought centers. There definitely are pathways for this to occur. We are not physiologically bound to continue to be emotional about whatever we happen to receive from the amygdalic center. In everyday life, there will be events in which we want to correct the primitive memory: if we determine, for example, that the snake was really just a piece of rope (LeDoux, 1989, p. 272); and in psychotherapy we will need to learn how to turn off certain phobic reactions which we have stored in our amygdaloid center. But armoring, as Reich defines it, is not the denial of these necessary human functions, but their rigid imposition or introjection, their "anchoring" into the human mind and body. Moreover, the two-way nerve pathways between neocortex and amygdala, while they do allow for some measure of control over the emotional system by the neocortex (although evidently with some major limitations), also allow for what I will call a *bodily reconsideration of thoughts*. That is, once the neocortex forms a thought, it seems to project it back toward the amygdala for a second chance at giving it emotional value, a second evaluation or "computation." The amygdala's connections with the hippocampus "may allow," LeDoux writes,

> the amygdala to evaluate the affective significance of cognitive information processes in the hippocampus. If so, the role of the amygdala in assigning emotional significance would not be restricted to immediately present sensory stimuli arising from the external environment or from within the body, but would also apply to sensory-independent cognitive information generated centrally, perhaps in the form of images, words and thoughts. (1989, pp. 276–277)

The evaluative judgments of the amygdala thus acquire a continuous effect on neocortical activity through the bodily reconsideration within amygdalic functioning that goes on, normally, all of the time, even with conscious thought. If this is the case, then there would always be a preventive process in place for alleviating the mind-body split. But here again, armoring would interfere in some way: would it try to shut off or block this second consideration by the amygdala of what the conscious mind is thinking? Or would it, in the manner of a basic psychoanalytic model, succeed only in shunting the emotional reality of thought into a virtually irretrievable unconscious struc-

ture in which the emotion would not simply be stored but would be distorted and would lie in wait to cause trouble at some level of mental functioning?

Two other features of the amygdala seem to align it especially with body rather than mind. First, the so-called peripheral nervous and humoral systems could provide feedback to the brain in instances during which the amygdala has not been able to get its affective message through to the neocortex on the first try, but in which it had managed to arouse these peripheral systems. This, according to LeDoux, "gives the brain a second chance at emotional experience when the central mechanisms fail to produce such an experience" (LeDoux, 1989, p. 383). In common sense terms, this would mean that if for some reason you did not react with fear to the presence of something dangerous because you were too preoccupied, you would get another warning by way of the peripheral systems, which in turn would project their message again through the amygdala to the higher centers. This arrangement again supports the concept of the "thinking of the body." So also does the second amygdalic feature, namely its (presumed) linkages with visceral processes. Research cited by LeDoux, involving the vagus nerve, has led to the suggestion that "the amygdala is critically involved in viscerosensory processing." The vagus nerve, one of the cranial nerves into the brain, originates "in the tissues of the abdominal cavity," and conducts impulses "from the gut, heart, blood vessels, and other organs" (LeDoux, 1989, p. 275).

The theory, therefore, is not a value-neutral instrument. The body, identified here with the functioning of the amygdala, provides essential guidance for the thinking of the higher cortical centers, and if that guidance is interfered with by cultural conditioning, the human organism will be damaged, even though it could still function in some manner. Residual asymmetrical dualism leads to value judgments. This would not have surprised Reich. Reich, who was developing and using residual asymmetrical dualism theory in his later therapeutic work (Efron, 1980, pp. 264–266), argues for the ethically mandatory application of certain insights he has had in the treatment of a schizophrenic patient, just as he argues that some methods of dealing with what he terms "the schizophrenic split" of mind and body, specifically those of the electroconvulsive "shock" therapy of the 1940s, are precisely *not* the way to treat it (Reich, 1972, pp. 399–508).

Residual Asymmetrical Dualism on the Operating Table

Putting aside LeDoux's research and brain neurophysiology at this point, I will proceed to suggest briefly the theory of residual asymmetrical dualism in a few, rather different, contexts. The aim will be to suggest first that residual asymmetrical dualism not only obtains in many (and hypothetically, in all) situations, but that its recognition in research inquiries can lead to taking

certain actions on the part of intelligent human beings. These actions, depending on the situation, may be of a discrete and limited nature, or they may be on so large a scale as to redirect an entire area of social practice.

In 1989, Henry Bennett commented on a remarkable finding from the field of anesthesiology. It appears that patients under general anesthesia later demonstrate some sort of recall of things that were said in their presence during their surgery, and that such things heard can have an effect on their recovery. Now Bennett admits readily that as a rule these patients cannot verbally recall what happened during the operation. "The patients' memories are of a special sort." For example, they may have heard remarks predicting that they will do badly, and, power of suggestion being in force, their recovery may become impaired. As Bennett formulates the claim being made, it sounds very much like an instance of an area of brain functioning going on in the absence of conscious awareness but with cognitive import: "Studies show that language understanding continues during anesthesia, though explicit recall of what is said does not. But the understanding is enough to allow patients to recognize meanings of what is said and to respond later without consciously remembering what was said to them" (quoted in Goleman, 1989).

Bennett, Davis, and Giannini (1985) demonstrated in a double-blind study that patients who were completely amnesiac regarding "intraoperative spoken suggestion" nonetheless responded to an individualized suggestion, using their own preferred name, and made to them while under general anesthesia: that they pull on their ear during post-operative conversation. The rate of frequency of ear-touching was higher in this group than in a similar group of patients who did not receive the suggestion. Of the eleven patients who were given the suggestion through a tape played into headphones while they were "out," nine showed ear pulls for a total of 66 ear pulls; the control group of 21 patients showed ear pulls among only nine, and a total number of pulls of 18. Bennett, DeMorris, and Willits (1988) reported a similar experiment in which four kinds of suggestions were made (touching either the right or the left ear, lifting either the right or the left index finger) during full anesthesia. Again, a personalized, individualized tape message accompanied the suggestion, in the expectation that learning would be enhanced if the message was linked to suggestions and wishes for a speedy recovery and addressed to the patient by name. These predictions were born out: of 48 patients, 33 showed the ear touching or finger-lifting behavior ($p<.02$).

Bennett has argued that it proves nothing to show that anesthetized patients who receive "a presentation of word pairs out of any context and without meaning" and not accompanied by a personalized, individualized taped presentation, fail to recall the words spoken (Bennett and Boyle, 1986, pp. 988–989, reply to Eich, Reeves, and Katz, 1985). The patients are likely

not to recall verbally what was said verbally, in any case, and they are especially unlikely to learn something under anesthesia that is unrelated to their sense of well being.

Other experiments on the possibility of learning while under anesthesia have shown that more is involved than the acquisition of suggestions for moving some part of the body during a postoperative interview. Rath (1982), studying a group of 44 surgical patients, found that those who, while "still at surgical levels of anesthesia," were read a beneficial suggestion concerning their recovery, actually did better in recovery than patients who were read an irrelevant suggestion. "Those patients who received the beneficial suggestion had a substantially better postoperative term. Most notable, they reported less pain, used less pain medication, and were discharged earlier" (Rath, 1982). In another study involving 60 patients undergoing voluntary hysterectomy, and using a "patient-controlled analgesia (PCA) system," in which the level of analgesia is set by the patient and in which a tape was played suggesting that any pain the patient might feel during recovery would not trouble her, patients "showed a significant reduction of 23% in their morphine requirements in the first 24 hours postoperatively," as compared with a control group. The level of pain *perceived* did not differ appreciably between the two groups, a finding consistent with the fact that no suggestion was made in the tape read to the patients that little pain would be felt (McClintock, Aitken, Downie, McArdle, and Kenny, 1989). In a similar study with hysterectomy patients, therapeutic messages were read to the anesthetized subjects, but not to a control group.

> 12 minutes of suggestions were repeated three times on each side of the suggestion tape: the major section described for 9 minutes the normal postoperative procedures with advice on how best to cope with them . . . . ; then 2 minutes of direct therapeutic suggestions (e.g., "You will not feel sick, you will not have any pain . . . ") and 1 minute of third person suggestions (e.g., "The operation seems to be going very well and the patient is fine"). (Evans and Richardson, 1988)

Results showed that the patients who had received these suggestions "spent significantly less time in hospital after surgery, suffered from a significantly shorter period of pyrexia, and were generally rated by nurses has having made a better than expected recovery." All but one of the 19 patients who had received this suggestion tape guessed correctly that they had indeed been played the tape, even though they had no recall of what was said on it; the control group (n=20) guessed only at chance level.

Comprehension while under anesthetic conceivably might be a function of the amygdaloid complex, and it could also be an instance of residual dualism. A general anesthetic is commonly supposed to put all of one's consciousness out. But the actual effect may be more subtle: what the anesthesia blocks is

conscious awareness, and what it apparently leaves intact is a kind of cognitively functioning unconscious, in which the amygdala functions as one component. Bodily memory is at work, taking in new information and evaluating it emotionally. But such evaluation lacks normal cognitive components. The patient thus can hear the jokes in the operating room about the terrible condition he or she is in, but cannot evaluate these as being jokes. The sadism of jokes may overpower their intended benign effects, and one part of the mind, the part more associated with body, can feel this. One woman, who was having a bone-graft to her femur, and was exposed to highly pessimistic comments by the surgeon while under surgical anesthetic levels, recalled both in a post-operative interview (conducted under double-blind conditions), and in hypnosis, that something was wrong with her leg. "She had by far the longest convalescence of the 33 patients in the study" (Bennett, Davis, and Giannini, 1985, p. 177).

The "hearing despite anesthesia" phenomenon may be taken as an indication of residual asymmetrical dualism at work, in human mind-body relations, but it is also a situation that suggests a policy which must be reasonably advocated in human ethical practice. Dubovsky and Trustman (1976) had maintained that there is no harm in discussing clinical aspects of a patient's case while that patient is undergoing anesthesia (Bennett, Davis, and Giannini, 1985, p. 174). Given the new findings, however, Bennett recommends that "At a minimum, those doing surgery should control what's said in the operating room or let the patient have earphones that play music of his own choosing to block the sounds of the operating room" (quoted in Goleman, 1989). Beyond this minimum, and depending upon further confirmations of the line of inquiry into the value of positive recovery suggestion tapes played to the anesthetized patient, there may be enough evidence to warrant the inclusion of such suggestion tapes into any serious surgical operation requiring general anesthesia.

As an instance of residual asymmetrical dualism, the evidence from the operating table is striking. There is, however, one problem with it: in this type of example, the cognitive "mind" of the patient could not get into the situation; it is an example that gives us a chance to have and express our care for the bodily half of our residual dualism without having to accept any implication of what I have called "asymmetrical" value-preference. The body here does not have to be seen as guiding the mind because what we normally call "mind" is not even at work.

Gendlin and the Act of Focusing on the Body

A more complete example of asymmetricality may be approached through a description of the therapeutic work of Eugene Gendlin. This is not to sug-

gest, however, that Gendlin's work is directly comparable to Bennett's (nor that Bennett's is directly connected with that of LeDoux). In this presentation of the theory of residual asymmetrical dualism, I am drawing deliberately on different research inquiries for corroboration, but I am not proposing that any one area be regarded as the foundation for another.

Gendlin, a psychologist as well as a philosopher, has written most interestingly about the thinking of the body. He has described himself as having long been one of the few philosophers concerned with the "newer," that is the bodily oriented, therapies (Gendlin, 1989, p. 26) rather than with the therapies of verbal interpretation descending from Freud. For over two decades, Gendlin has developed a therapeutic method in which the client learns to wait receptively, at a certain point, for what the body will tell him or her. To put it very simply, the client, or in fact any person who has happened to hit upon this method through self-discovery, will reach what appears to be a verbal cessation, a kind of impasse, a silence, in which a disturbing problem is felt, but no further words seem to occur. But this is a very good point to reach, according to Gendlin. If I now just focus receptively on my body, especially the "middle" of my body, and wait for what the body will tell me, then a new word or image will (sometimes) come into my consciousness. Often this new word or image will be a surprise, not something that continues the terms of the previous verbalized discussion (in inner speech or with therapist). The word or image will not merely be perceived as occurring in my mind, but will have feeling. This feeling is a bodily sense, a felt sense, and as Gendlin explains, the process of silence accompanied by receptive waiting followed by a new word or image that is felt, will not even occur unless I maintain a mental focus on the middle of my body (Gendlin, 1989, p. 22).

Before reaching the juncture of the productive silence, there are other steps in the process, one of which Gendlin calls the *felt sense of the problem.* Faced with an array of things that seem to be disturbing me, I am to ask myself "which problem feels the worst right now?" But rather than attacking this question analytically, I am again instructed just to wait, while I think of my body, my whole body, and imagine addressing that question to my body. Now here, a silence might *not* occur: "you will probably begin to encounter a lot of static from your mind: self-lectures, analytic theories, clichés, much squawking and jabbering." Gendlin calls this "noise" coming from the mind, and instructs me to turn it off, "tolerantly," by saying something like "Yes, yes, I know all that . . . . Let's set it aside for now" (Gendlin, 1981, pp. 53–55). What I very well might encounter, after this noise has passed, is not a clear word or image at all, but "the murky discomfort of the unclear body-sense of it" (Gendlin, 1981, p. 90). That is not to say that the feeling is what some might call a "gut feeling," nor is it a matter of emotional catharsis, or a body sensation (Gendlin, 1981, p. 69). It is a human feeling, and as such it is never

completely removed from language, or from some patterning imposed by culture, but the feeling is of the body, and although it is never without some contact with the patterns of language it is not identical with them. This position in fact is Gendlin's overall theory of the body: the body is always implicated in culture but not reducible to it. It is as if one concedes that all thinking is mediated by language, but then insists that we still can refer with meaning to some thought or image that comes distinctly from the body.

Gendlin's 1989 article develops this position, with attention to the way in which it differs from the theories of psychoanalysis, deconstruction, dialectic, and even from the Nietzschean "wisdom of the body." Gendlin develops his theory of how the body functions in a mode that is not one of imposed, external order, but yet has order implicit in what it tells us. As he points out, this is not the Nietzschean sense of body as the source of "primordial chaos" upon which order must be forced (Gendlin, 1989, p. 3). For the theory of residual asymmetrical dualism, Gendlin's work offers a significant corroboration in this sense: it confirms that the residual dualism of mind and body may be alleviated by accepting what the body feeling communicates to the person and allowing that feeling to guide the person toward (temporarily) resolving the mind-body split. Gendlin's theory proposes to achieve this guidance by the body not through the drastic Nietzschean route of supposing that the body is incompatible with any imaginable order, but that it offers a basis for an orderly way of regulating the human being's life.

While psychotherapy is one major area in which this orderly functioning of the body may be observed, it is not the only one. Gendlin (1989) relies as well on a model of poetry writing to demonstrate the same type of argument. When the poet has written several lines but the next line does not come, there is a productive silence, which involves paying receptive attention to the middle of the body, and followed, in benign instances, by the emergence of a new line which could only have come into consciousness in connection with this communicating with the body. Such communication acknowledges that the body has a sense of all the previous written lines of the poem and can participate in creating the new, appropriate line. Not all poetry is written this way, but some probably is.

What is especially pertinent here for the theory of residual asymmetrical dualism is the way Gendlin's focusing method is grounded in a distinction between mind and body which has usefully determinate dual poles, but which does not presuppose that the resulting dualism is invariably decisive in mental functioning. The dualism may recede if the person is able to bring about conditions favorable for mind-body unity. Gendlin shows how mind may get out of its solipsistic "noise," reach a felt sense of connection with the body, and be guided by the body. The residual dualism will make itself felt shortly after: at some later time a new series of steps will be required in order

to be able to hear—or rather to feel—what the body is saying. But only if we can feel that and make the "shift" for change in our feelings can therapy be effective, or the poetic line feel right.

Now all of the while that we are not "focusing" on the middle of our bodies or experiencing a pronounced shift in our feelings, our thought processes are not separated entirely from our bodies, nor from our sense of embodiment. It is possible to mount arguments showing that there is bodily participation all through experience, in every word spoken or heard, in every thought or perception, if we like. But this fact does not serve to deny the residual dualism of our condition: if it were enough to know that there are feelings during verbalization, and that there are felt, unspoken anticipations of words within speech, in order to deny the opposition of body and mind, then our problem would have dissolved. But it is not enough: there are too many situations when the emergence of new meanings from the fuzzy images of body imagination during the act of focusing indicates another order of functioning directly associated with body, rather than a constant mind-body integration. Possibly, those philosophers who have labored to show us that the body is always involved, in every perception and thought—and here I am thinking of one of Gendlin's basic sources, the thought of Maurice Merleau-Ponty (1962)—may have proved too much.

Dewey and Residual Asymmetrical Dualism

Could it be the case that John Dewey, in his lifelong opposition to dualisms of any kind, also proved too much? At least it is possible that he protested too much. In Dewey's view, human existence has a ground in *primary experience*. And experience begins with a feeling of *qualitative immediacy*, which is not characterized by conscious cognitive thought. In aesthetic experience, this phase is associated with the notion of *undergoing*, which is an active receptivity, sometimes confused with passivity, in which much energy is summoned to *take in* what may be *had* (Dewey, 1934/1987, pp. 59–60). There is, in major aesthetic experience, even a feeling of *seizure* by the work of art (Dewey, 1934/1987, pp. 149–50). But in any experience that is actually *had*, the immediacy and the undergoing are augmented by cognitive processes within the phase of *doing*. Doing is an active following out of the full implications of the qualitative immediacy in all its relations within the work of art, to associated prior experience, and to the experiencing one's sense of a future.

The problem arises of how the first, primary, qualitatively immediate, and non-cognitive phase, or how the process of undergoing, could be indispensable to experience, if it does not contain any thinking. Dewey's many favorite allusions to the organic relations of animals with their environments (in *Art as Experience*) give the impression that he is, if not eliminating

thought from this phase, reducing it to the capacity of the non-human mammal. How is primary experience related to cognitive processes? That is the question Dewey decided to tackle in his most serious metaphysical work, *Experience and Nature*, where he attempted to delineate the generic traits of existence (Dewey, 1929/1981). The Dewey scholar, S. Morris Eames, has shown how Dewey's language in this volume requires careful restatement, especially in light of Dewey's own explanations in response to critical questions put to him in 1939 (Eames, 1964). What Eames discerns is that qualitative immediacy for Dewey contains within it something more than undifferentiated feeling, or rather, that the feeling that is *had* incorporates immediately some sense of the connections in experience which are given, that is, felt but not known. Because of the presence of connections in experience, it is possible to formulate relations between the primary level of experience and the full set of its implications. In somewhat different terminology, Sleeper (1985) points to the pervasive presence of inference within Dewey's theory of the immediately *had* experience. If something is felt but not known, then it must also be pre-reflectively registered and thus in effect, it must be known, known to the human organism at the level other than that of conscious thought and registered in such a way that it can be grasped by cognitive thought for processing. That which is felt with qualitative immediacy will also be a registration of certain connections which are given in experience, not created by the mind on a purely imaginary basis. Moreover, the felt but not known situation also is given a certain broad stamp of value. Thus Dewey's sentence describing the "first dumb, formless experience of a thing" goes on to stipulate a key phrase which marks the primary experience as one having a value: "After the first dumb, formless experience of a thing *as a good*, subsequent perception of the good contains at least a germ of critical perception" (Dewey, 1929/1981, p. 300, italics added). The initial phase of experience already contains a felt perception of the experience being good (or not good, bad, etc.). The function of knowing during the immediacy phase is analogous, it is now feasible to say, to the cognitive but not consciously known functions of the amygdala, discussed above. It now seems that Dewey had not meant to rule out a minimal cognitive operation when he excluded reflective operations from the phase of immediacy.

There is a further feature of Dewey's conception of experience that identifies him with the theory of residual dualism. Dewey holds that our refined cognitive methods and conclusions must be "brought back to the things of ordinary experience, in all their coarseness and crudity, for verification" (Dewey, 1929/1981, p. 39). The practical results of cognition must be tested against their originating needs and problems "in primary experience, in all its heterogeneity and fullness . . . " (p. 39). If I again may take the liberty of associating "the things of ordinary experience" with that which we feel in our

bodies, then it will be clear that Dewey is saying that the bodily sense of reality not only begins the problematics of experience as its primary or immediate phase; the bodily sense of experience also serves as the terminating point of any given inquiry. To be sure, there is cognitive thought involved in "the things of ordinary experience" but there is a great deal of advanced, specialized, refined, technical, and philosophical thought that is extraordinary, not part of ordinary experience in its primary phase, except as all such matters have their origins in genuine problems of human beings. In Dewey's philosophy, these higher operations are not permitted to serve as their own ground of verification or validation. To the extent that higher level cognitive functions can be instrumental in satisfying the needs that have arisen out of a situation, they contribute to evaluation, indeed they are indispensable to it. But they are not the needs in themselves. The refined products of thought must stand muster before the "ordinary things" in all their "coarseness and crudity."

That Dewey means "things" in a sense implying an integral relation to emotionally charged perception is shown by his statement at another location in *Experience and Nature*:

> Empirically, things are poignant, tragic, beautiful, humorous, settled, disturbed, comfortable, annoying, barren, harsh, consoling, splendid, fearful; are such immediately and in their own right and behalf. (Dewey, 1929/1981, p. 82)

Such emotionally charged perceptions of things would entail bodily feeling, through whatever psychophysiological processes by which we have bodily feelings, and could not be apprehended in their immediacy with distanced, relatively affectless thought. At the same time, care is taken, in Dewey's conception of ordinary things, to allow for what is coarse and crude—which is not the way we are accustomed to describe the discriminating judgments of reason.

It appears that Dewey, despite all he has written which would lead us to assume he would have no use for a residual, irremovable dualism in human thought, indeed advocates at this point just such a theory. In one of the most impassioned sections of *Experience and Nature*, Dewey describes an inevitable separation of mind and body that he does not attribute entirely to the workings of philosophical tradition nor to other cultural causes. The passage occurs in one of his main discussions of the mind-body problem. In fact, Dewey says that "In a practical sense, here is the heart of the mind-body problem," namely, that as human activity develops from its initial condition of immediacy, it becomes widened and deepened so that "there are both added resources and values, and added liabilities and defaults. The actualization of meanings furnishes psycho-physical qualities with their ulterior significance and worth. *But it also confuses and perverts them*" (Dewey, 1929/1981, pp. 228–229, emphasis added). These are strong words. Dewey seems to be

referring to an inevitable confusion, inherent in the very creation of meanings. On the basis of that inherent confusion, the perverting and corruption (also a word he uses) of experience by culture can take place.

Some of Dewey's examples of how experience becomes "perverted" are translatable into Reich's concept of armoring. Dewey put it this way: "The effects of this corruption are themselves embodied through habits in the psychophysical, forming one-sided degraded and excessive susceptibilities; creating both dissociations and rigid fixations in the sensory register." Once these rigidities and dissociations are instilled in the organism, they affect "every subsequent phase of personal and social life." They also reach so deeply into the human organism as to be mistaken for its spontaneous self, and that false self then goes on to be systematized within social interaction. At this point, but only at this point, Dewey's assignment of the evils of the mind-body split to cultural and historical causes is reasserted. For once "native need, adjustment, and satisfaction . . . lose their immediate certainty and efficiency," they "become subject to all kinds of aberrations" (Dewey, 1929/1981, p. 229). Withdrawal from genuine sociability follows, and is expressed in a huge array of institutionally embodied ways:

> carefully cultivated and artificially protected fantasies of consolation and compensation; rigidly stereotyped beliefs not submitted to objective tests; habits of learned ignorance or systematized ignoring of concrete relationships; organized fanaticisms; dogmatic traditions which socially are harshly intolerant and which intellectually are institutionalized paranoic systems; idealizations which instead of being immediate enjoyments of meanings, cut man off from nature and his fellows. (Dewey, 1929/1981, p. 229)

Eventually a complete "secondary pseudo-environment" is formed, and it affects all aspects of our "dealing with the primary environment" (p. 229).

What Dewey has said in this passage is that a mind-body separation of a most harmful kind is formed and reinforced by institutional means, but that the origins of the split were in the very nature of experience itself, within civilization. "The subconscious of a civilized adult reflects all the habits he has acquired. And in so far as these involve mal-coordinations (as they assuredly come to do in a very short time for those living in complex 'artificial' conditions), sensory appreciation is confused, perverted and falsified" (Dewey, 1929/1981, pp. 227–228). Thus it is the complexity of social structure combined with the inherently problematical nature of the creation of meanings within experience, exacerbated infinitely by the rigidifying effects of "learned ignorance" and its varied fanaticisms, which trap the human creature in its modern condition. Therefore it is necessary to learn the way back to qualitative immediacy in order to once again be guided by the needs that are generated and felt from within that phase of experience. Philosophy can help through its clarifications of experience to bring this relearning about.

The function of philosophy is nothing less and nothing more than performing a service for civilized human consciousness of helping to re-establish the evaluative asymmetrical relation between body and mind, namely that body, in the sense of qualitative immediacy, provides essential guidance for mind.

Such in summary, is what Dewey maintains. But what he did not maintain is that there is no natural basis within the human mind for the initial development of an opposition between mind and body, or at least for their effective separation in human interaction.

Conclusion

I have attempted to show that the theory of residual asymmetrical dualism may be formulated and sustained in the name of several widely differing contexts. These contexts in turn may gain clarification and supporting argument from the theory I have described. Many additional contexts could be added, and it is feasible to find inter-relations and reciprocal insights by bringing these contexts into interdisciplinary focus under the terms of this theory. But while the various inquiries may be freely combined to generate insights into mind-body relations, no particular research inquiry is indispensable to the theory: it would be possible to argue the theory without the benefit of one or more, or even of all, of the contexts brought forward in this essay. It is meant to be a flexible theory, and it needs further refinement as well.

I have made no effort to prove the theory of residual asymmetrical dualism, nor do I think any proof of this or of rival theories is within reach. Corroboration should be all that matters at this stage. It may even be true that no amount of research or reconceptualization will ever be able to "solve" the mind-body problem, as McGinn (1989) suggests. But this is a misleading focus, because what we must value are inquiries which, however they may be limited ultimately, do throw light on the relationships of mind and body and which do suggest (or even entail) a program of social action to be taken. Residual asymmetrical dualism is a theory that will allow members of many research disciplines to think constructively about the mind-body problem(s). Part of my effort has been to show that considering mind-body relations through this theory will lead to the formulation of actions to be taken in relieving the effects of human self-separation, the exacerbated distancing in all areas of human life between "mind" and "body." As Dewey maintained, and as Reich would have agreed, "In a practical sense, here is the heart of the mind-body problem."

References

Aggleton, J.P., and Mishkin, M. (1986). The amygdala: Sensory gateway to the emotions. In R. Plutchik and H. Kellerman (Eds.), *Emotion: Theory, research and experience*, Vol. 3 (pp. 281–299). Orlando: Academic Press.

Ben–Ari, Y. (Ed.). (1981, September 1–4). *The amygdaloid complex*. Proceedings of the international symposium, Senlis (France). Amsterdam–New York–Oxford: Elsevier/North Holland Biomedical Press.

Bennett, H.L., and Boyle, W.A. (1986). Selective remembering: Anesthesia and memory. *Anesthesia and Analgesia, 65*, 988–989.

Bennett, H.L., Davis, H.S., and Giannini, J.G. (1985). Nonverbal responses to intraoperative conversation. *British Journal of Anesthesia, 57*, 174–179.

Bennett, H.L., DeMorris, K.A., and Willits, N.H. (1988). Acquisition of auditory information from different periods of general anesthesia. *Anesthesia and Analgesia, 67*, S12.

Dewey, J. (1925). *Experience and nature*. Chicago, London: Open Court.

Dewey, J. (1981). *Experience and nature*. (second revised edition) J.A. Boydston (Ed.). Carbondale, Edwardsville: Southern Illinois University Press. (Original work published 1929)

Dewey, J. (1987). *Art as experience*. J.A. Boydston (Ed.). Carbondale, Edwardsville: Southern Illinois University Press. (Original work published 1934)

Dubovsky, S.T., and Trustman, R. (1976). Absence of recall after general anesthesia: Implications for theory and practice. *Anesthesia and Analgesia, 55*, 696.

Eames, S.M. (1964). Primary experience and the philosophy of John Dewey. *The Monist, 48*, 407–418.

Eccles, J.C. (1978). *The human mystery*. Berlin-Heidelberg-New York: Springer Verlag.

Efron, A. (1980). The mind-body problem in Lawrence, Pepper and Reich. *Journal of Mind and Behavior, 1*, 247–270.

Efron, A. (1985). *The sexual body: An interdisciplinary perspective*. New York: Institute of Mind and Behavior.

Eich, E., Reeves, J.L., and Katz, R.L. (1985). Anesthesia, awareness, and the memory/awareness distinction. *Anesthesia and Analgesia, 64*, 1143–1148.

Evans, C., and Richardson, P.H. (1988). Improved recovery and reduced postoperative stay after therapeutic suggestions during general anaesthesia. *The Lancet, 27*, 491–493.

Fonberg, E. (1986). Amygdala, emotions, motivation, and depressive states. In R. Plutchik and H. Kellerman (Eds.), *Emotion: Theory, research and experience*, Vol. 3 (pp. 301–331). Orlando: Academic Press.

Gazzaniga, M.S. (1985). *The social brain: Discovering the networks of the mind*. New York: Basic Books.

Gendlin, E.T. (1981). *Focusing* (second revised edition). New York: Bantam Books.

Gendlin, E.T. (1989). The body, language, and situations. *The Focusing Folio, 8*, 1–32.

Giannini, J.A. (1986). Postoperative response to behavioral suggestions administered to surgical patients while under surgical levels of general anesthesia. [Unpublished doctoral dissertation, California School of Professional Psychology, Los Angeles]. *Dissertation Abstracts International, 47:08B*, 3520.

Goleman, D. (1986, August 2). Mental images: New research helps clarify their roles. *New York Times*, p. C1.

Goleman, D. (1989, August 15). Brain's design emerges as key to emotions. *New York Times*, p. C1.

Herskowitz, M. (1986). Human armoring: An introduction to psychiatric orgone therapy. (chaps. 1–3). *Annals of the Institute for Orgonomic Science, 3*, 18–34.

Herskowitz, M. (1988). Human armoring: An introduction to psychiatric orgone therapy (chap. 5). *Annals of the Institute for Orgonomic Science, 5*, 19–32.

Herskowitz, M. (1989). Human armoring: An introduction to psychiatric orgone therapy (chap. 6). *Annals of the Institute for Orgonomic Science, 6*, 53–68.

James, W. (1884). What is an emotion? *Mind, 9*, 188–205.

Konia, C. (1982a). Orgonotic functions of the brain: Part I. *Journal of Orgonomy, 16*, 110–123.

Konia, C. (1982b). Orgonotic functions of the brain: Part II. *Journal of Orgonomy, 16*, 260–276.

Konia, C. (1983a). Orgonotic functions of the brain: Part III. *Journal of Orgonomy, 17*, 101–112.

Konia, C. (1983b). Orgonotic functions of the brain: Part IV. *Journal of Orgonomy, 17*, 227–239.

Lawrence, D.H. (1936). Study of Thomas Hardy. In E.D. McDonald (Ed.), *Phoenix: The posthumous papers of D.H. Lawrence* (pp. 398–516). London: Heinemann.

LeDoux, J.E. (1978). The split brain and the integrated mind. [Unpublished doctoral dissertation, State Univ. of N.Y. at Stony Brook]. *Dissertations Abstracts International, 38:11B*, 5637–5638.

LeDoux, J.E. (1989). Cognitive-emotional interactions in the brain. *Cognition and Emotion, 3,* 276–289.

LeDoux, J.E., and Gazzaniga, M.S. (1981). The brain and the split-brain: A duel with duality as a model of mind. *Behavioral and Brain Sciences, 4,* 109–110.

Lee, D.S. (1983). Adequacy in world hypotheses: Reconstructing Pepper's criteria. *Metaphilosophy, 14,* 151–161.

MacLean, P.D. (1949). Psychosomatic disease and the visceral brain: Recent developments bearing on the Papez theory of emotion. *Psychosomatic Medicine, 11,* 338–353.

MacLean, P.D. (1952). Some psychiatric implications of physiological studies on the fronto-temporal portion of the limbic system (visceral brain). *Electroencephalography and Clinical Neurophysiology, 4,* 407–418.

McClintock, T.T.C., Aitken, H., Downie, C., McArdle, C.S., and Kenny, G.N.C. (1989). The reduction of postoperative analgesic requirements by intraoperative suggestions. *Anesthesiology, 71(3A),* A691.

McGinn, C. (1989). Can we solve the mind-body problem? *Mind, 98,* 349–366.

Merleau–Ponty, M. (1962). *Phenomenology of perception* [C. Smith, Trans.]. New York: Humanities Press. (Original work published 1945)

Nagel, T. (1986). *The view from nowhere.* Oxford–New York: Oxford University Press.

Papanicolaou, A.C. (1989). *Emotion: A reconsideration of the somatic theory.* New York–London–Paris–Tokyo: Gordon and Breach Science Publishers.

Pepper, S.C. (1967). *Concept and quality: A world hypothesis.* LaSalle, Illinois: Open Court.

Plutchik, R., and Kellerman, H. (Eds.). (1986). *Emotion: Theory, research and experience* (Vol. 3). Orlando: Academic Press.

Pucetti, R. (1981). The case for mental duality: Evidence from split-brain data and other considerations. *Behavioral and Brain Sciences, 4,* 93–123.

Rath, B.W. (1982). The use of suggestion with surgical patients during general anesthesia. [Unpublished doctoral dissertation, University of Louisville, Kentucky]. *Dissertation Abstracts International, 43:07B,* 2353.

Reich, W. (1972). *Character analysis* (third enlarged edition) [V.R. Carfagno, Trans.]. New York: Simon and Schuster. (Original work published 1949)

Reich, W. (1973). *The function of the orgasm* [V.R. Carfagno, Trans.]. New York: Farrar, Straus, Giroux. (Original work published 1942)

Sleeper, R.W. (1985). *The necessity of pragmatism: John Dewey's conception of philosophy.* New Haven: Yale University Press.

Walker, J. (1990). Of brains and rhetorics. *College English, 52,* 301–322.