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THE BURIED TREASURE

PSYCHOLOGY, we can say without fear of contradiction, is the major preoccupation of the age. A great deal of our thinking is involved in thinking about how we think. Do we make choices—are we "free"?—or do we only think we make choices, but actually behave automatically in response to various pressures and needs? Are we, in short, responsible for what we do? If we are responsible, then we are accountable; and if we are accountable, then we need for guidance some way to identify and measure right and wrong. But if we are not free—if what we do is determined by forces other than our own—then morality is a complete illusion, and right and wrong are imaginary values.

We don't really believe this, but sometimes take the position that we do, since it relieves us of responsibility. Responsibility brings both pleasure and pain. It is pleasurable because only a real person, a conscious identity, can be responsible. The desire to think of ourselves as having identities has no explanation. It is a fact of life—an original and indisputable reality—that we cannot go behind. All of what we call "value" flows from this reality. Value is not something that we can explain. Value is the means by which we explain everything else.

Since value is *sui generis*—born of itself—it is the foundation of all thought, all intention, all decisions concerning want and need. But these two words, "want" and "need," make a basic distinction among values. We know perfectly well that not all wants are needs. We know that what we want is often something it is better to do without. So there are two kinds of values which should be distinguished one from the other. The art, craft, and science of making this distinction was once the subject-matter of psychology. Its content discloses the area of decision-making by the soul. Its discipline is the skill of making right decisions. The discipline applies to everything we do—all, that is, in which our decisions have a part. Actions or events in which we have no part are not *ours*—we may be their object, but are not the subject who determines their quality and character and result.

We often experience—or believe we experience—actions and events which are not ours. If this experience is pleasing, we call it luck or a gift of the gods. If it is unpleasant or painful, we declare it unjust and attribute it to evil powers—bad people, Satan, or a cruelly indifferent universe.

Psychology, then, is the science of the soul. The soul is the agency of moral decision, but since all practical decisions—decisions made in a world of which we know only little—involve the possibility of making mistakes, we need to learn how the world and the things in it work. The world is the *other*, made up of things not ourselves—*apparently* not ourselves. Skill in dealing with things other than ourselves is called technique. Yet there are moments when we feel at one with the world—the same rhythms coursing through us and shaping the life and happenings of the world. How should we relate to the world which is sometimes other, sometimes a part—an extended part—of ourselves? This is the issue—perhaps the only issue—of psychology.

Called for, then, is study of the world. Study of *only* the world, however, puts an end to psychology. Years ago, a witty German professor said: "Psychology long ago lost its soul and is now said to be losing its mind." That is our present situation, or was until a few years ago. The main business of psychology, today, is the recovery of its mind and soul—*our* minds and souls.

Is it fair to say that the soul uses apparatus which is not part of itself—which has the identity

of a tool, not the identity of a conscious decision-maker? This is like asking what a human would be if he were nothing but a tool, or a kit of tools, without an identity capable of reflection and decision. Some might say that then he couldn't be human, or only proto-human—a unit of psychic equipment capable of being ensouled. One pioneer psychologist of the present, Julian Jaynes, of Princeton University, deals with this question in a historical study of human consciousness and behavior—*The Origin of Consciousness in the Breakdown of the Bicameral Mind* (Houghton Mifflin, 1976). "Bicameral" means for him a mind that is only equipment, that is manipulated by external forces. He uses Achilles, in the *Iliad*, as the type of a man who lacks self-consciousness, who does not deliberate and decide for himself. Dr. Jaynes comments:

> Somehow we still feel that there must, there absolutely *must* be something he feels inside. What we are trying to do is to invent a mind-space and a world of analog-behaviors in him just as we do in ourselves and our contemporaries. And this invention, I say, is not valid for Greeks of this period.
>
> Perhaps a metaphor of something close to that state might be helpful. In driving a car, I am not sitting like a backseat driver directing myself, but rather find myself committed and engaged with little consciousness. In fact my consciousness will usually be involved in something else, in a conversation with you if you happen to be my passenger, or in thinking about the origin of consciousness perhaps. My hand, foot, and head behavior, however, are almost in a different world. In touching something, I am touched, in turning my head, the world turns to me; in seeing, I am related to a world I immediately obey in the sense of driving on the road and not on the sidewalk. And I am not conscious of any of this. And certainly not logical about it. I am caught up, unconsciously enthralled if you will, in a total interacting reciprocity of stimulation that may be constantly threatening or comforting, appealing or repelling, responding to the changes in traffic and particular aspects of it with trepidation or confidence, trust or distrust, while my consciousness is still off on other topics.
>
> Now simply subtract that consciousness and you have what a bicameral man would be like. The world would happen to him and his action would be an inextricable part of that happening with no consciousness whatever.

An earlier passage establishes with clarity what Dr. Jaynes means. There is, he says, no concept of *will* or word for it, in Greek thought—not, at least, until Socrates and Plato. "Thus, Iliadic men have no will of their own and certainly no notion of free will." He goes on:

> Now this is all very peculiar. If there is no subjective consciousness, no mind, no soul, or will, in Iliadic men, what then initiates behavior? . . .
>
> The characters of the *Iliad* do not sit down and think out what to do. They have no conscious minds such as we say we have, and certainly no introspections. It is impossible for us with our subjectivity to appreciate what it was like. When Agamemnon, king of men, robs Achilles of his mistress, it is a god that grasps Achilles by his yellow hair and warns him not to strike Agamemnon. It is a god who then rises out of the gray sea and consoles him in his tears of wrath on the beach by his black ships, a god who whispers low to Helen to sweep her heart with homesick longing a god who hides Paris in a mist in front of the attacking Menelaus, a god who tells Glaucus to take bronze for gold, a god who leads armies into battle, who speaks to each soldier at the turning points, who debates and teaches them by casting them in spells or drawing mists over their visual fields. It is the gods who start quarrels among men that really cause the war, and then plan its strategy. It is one god who makes Achilles promise not to go into battle, another who urges him to go, and another who then clothes him in a golden fire reaching up to heaven and screams through his throat across the bloodied trench at the Trojans rousing in them ungovernable panic. In fact, the gods take the place of consciousness.

The gods, in short, are the organizers and dictators of our central nervous system. They tell us what to do. Some psychologists might now call them the dynamic presences of the Unconscious. The soldiers of the Trojan war, Dr. Jaynes says, "were noble automatons who knew not what they did." They were not accountable and didn't feel responsible—"The god made me do it," they said, when asked to explain some dark offense.

By Roman times, one could say, the gods had been somewhat naturalized save on state occasions. After their serious quarrel, the two conspirators, Brutus and Cassius, having murdered Caesar, rebecome friends, and Cassius seeming contrite, explains his uncontrolled temper.

> *Cassius:* Have you not love enough to bear with me
> When that rash humor which my mother gave me
> Makes me forgetful?
>
> *Brutus:* Yes, Cassius; and from henceforth,
> When you are over-earnest with your Brutus,
> He'll think your mother chides, and leave you so.

Not a god, but a maternal trait was in control.

And so, by means of Cassius' conciliating speech—it was not he who raged and threatened Brutus, but his mother's generating presence—we come to Shakespeare who, twenty-three hundred years after Homer and the "noble automata" of his *Iliad*, endowed nearly all the characters in his plays with dual natures, one of the earth, the other heaven-aspiring. Discussing Falstaff, whom Bernard Shaw called "a besotted and disgusting old wretch," Harold Goddard (in *The Meaning of Shakespeare*) says:

> The trouble with the "besotted and disgusting old wretch" theory is that Shakespeare has given us that old wretch exactly, and he is another man: the Falstaff of *The Merry Wives of Windsor*. . . . But to assert that Falstaff is another man is not saying that he does not have many or even all of the vices of the "old wretch" for whom his defamers mistake him. Salt is not sodium, but that is not saying that sodium is not a component of salt. The truth is that there *are* two Falstaffs, just as there are two Henrys, the Immoral Falstaff and the Immortal Falstaff, and the dissension about the man comes from a failure to recognize that fact. That the two could inhabit one body would not be believed if Shakespeare had not proved that they could. That may be one reason why he made it so huge.

Shakespeare provides us with the spectacle of the endless contradictions in human nature, making both comedy and tragedy out of the mixtures in his characters. We laugh, we sigh, and leave the theater delighted and puzzled, going on to other things. But Shakespeare the dramatist who entertains has a hidden purpose, not in open view. He is testing his audience, or presenting opportunity for the play-goers to test themselves: How do I make up my mind about these characters? Am I just or shallow? Do I polarize for or against without sufficient cause? A play may leave little time for such introspection, and so the poet masquerading as dramatist hides his true intent.

Shakespeare never moralizes, though some of his characters are tirelessly at it, much of the time. A moralist is one who tells you what is right for you to do. Shakespeare himself will have none of this second-hand virtue. He knows that right is not right unless it is independent discovery. The pawn does nothing of itself, but is moved about, square by square, and cannot become a Queen save by perilous advances ending with translation into royalty. A rule of the game accomplishes what seems a miracle in human life. Yet the possibility is there, in all of us. Hamlet hates his conventional task of killing the wicked king. Yet he does it, knowing better. How much of the story of mankind is in this sore decision? What shall we say to ourselves about the play?

The moralizing, in short, is up to us. Shakespeare is continually setting the unknown and unrecorded code of the individual—what is right for *him* to do—against the hackneyed code of the times, which everyone knows and repeats with righteous vanity; but not Shakespeare, who stands to one side, hoping for another conclusion. In his examination of the "play scene" in *Henry IV*—one need not know the play to understand his comment—Harold Goddard speaks first of the similar scene, as yet unwritten in *Hamlet:*

> The play scene in Shakespeare's tragic masterpiece to come scarcely surpasses this one in the subtlety of its psychology or the intricacy of its interwoven meanings. Here, if anywhere, here, if ever, the truth is brought home that we are not single personalities, nor even double ones, but bundles rather of actual and potential, emerging and expiring selves, as many as there are people who love or hate

> us, or whom we love or hate. Each one out there evokes a different one in here. The relation between two individuals is itself an individual relation, and, when it is set up, something that never was before on sea or land is created. Within the confines of this brief scene, to the success of which Mrs. Quickly, as audience, makes a memorable if mainly silent contribution, half-a-dozen Falstaffs and Henrys jostle and elbow, come in and go out, split, disintegrate, and recombine, a veritable phantasmagoria of spiritual entities. Who would undertake even to enumerate, let alone characterize them? When Falstaff plays Hal's father, for instance he is partly King Henry rebuking the Prince for his wildness and partly the Falstaff who loves Hal as if he were his own son, and who longs to have Hal love him as if he were his father and consequently pictures himself as the sort of ideal father he would actually like to be to him.

Turning to the rejection of his old friend, Falstaff, by Henry when he becomes King—"I know thee not, old man"—Goddard notes that Falstaff had been Henry's teacher and friend. While they shared disreputable revels in which Falstaff had been the leader, "this does not alter the fact that Falstaff gave him unconscious instruction in wit, humor, good-fellowship, understanding of human nature, and above all an imaginative love of life for its own sake." Goddard muses:

> Practically all teachers have their good points, and even teachers of genius have their weaknesses. It is the art of the pupil to profit by the good points, to let himself be taken captive by the genius, and to overlook or reject the weaknesses.
>
> There is some soul of goodness in things evil,
> Would men observingly distil it out.
>
> It was Henry who said that (in a moment of unusual insight), and it fits the case of himself and Falstaff so perfectly that one could think Shakespeare had him say it for that reason. Falstaff was a teacher of genius with lamentable weaknesses. Henry should have rejected those weaknesses and turned the genius to account in his position as king. Instead of distilling out the soul of goodness and throwing away what was left, he carefully kept what was left and threw away the soul of goodness.

Why did he throw it away? He had a political reason—that is, a conventional reason. It would not do for a king to admit to so raffish a companion. A public character is not supposed to violate public morality. Henry responded to the rule of his times (and ours), not to the obligations of his heart. Yet he has moments when he sees better than he does. So with all the others. And we, in our judgments, ignore the virtue in the losing side. We want the world and the people in it to be either black or white. One must be patient when the coloring is mixed—patient and forgiving, wise and restrained. We know that, but rejoice instead in our whole-hearted absolutism—unless people come up to the mark we have set, we reject them. This is the law of thinking in conventions. We make exceptions, but only for ourselves. Whatever we do, we know what we *mean.*

As a playwright, Shakespeare plays with the conventions, yet is concerned with resistance to them. He is a partisan of the wisely unconventional man or woman, but leaves the watcher of the play free to join him or not. Advocacy would be moralizing—the poet's total defeat. Goddard says:

> Drama is the most democratic of the arts in the sense that a play must have a wide and almost immediate appeal to a large number of people of ordinary intelligence if it is to have success enough in the theater to permit the author to go on writing plays. The playwright must be nothing if not lucid. . . If a play's action is not plain and its characters are not easily grasped, it will obviously soon close its run. There is no going back and rereading in the theater.
>
> Poetry, on the contrary, is an aristocratic art. The poet is bound to please himself and the gods rather than the public—to tell the truth regardless of its popularity, to seek the buried treasure of life itself. In that sense he cannot help having a secret, and, even if he would, he cannot share it with the populace. When the moment of inspiration passes, he may not even comprehend it fully himself.
>
> What wonder, if this is so, that, among innumerable playwrights and many poets, there have been so few poet-playwrights. The poet-playwright is a contradiction in terms. Yet a poet-playwright is exactly what the young Shakespeare was.

Goddard calls several witnesses to his views, most frequently Dostoevsky. It is, he says, "as if Shakespeare were confirming Dostoevsky, and Dostoevsky Shakespeare." He adds:

> Only very ingenious persons will think that these two supreme students of the human mind, because they do not express themselves in scientific nomenclature or in the language of the twentieth century, must have been ignorant of truths that psychology is only now beginning to formulate.

Here we call on Thoreau, another of Goddard's "authorities," to say what he thinks of the respecters and followers of convention in matters of morality and choice. He wrote in a letter to Harrison Blake:

> When, in the progress of a life, a man swerves, though only by an angle infinitely small, from his proper and allotted path (and this is never done quite unconsciously even at first; in fact, this was his broad and scarlet sin—ah, he knew of it more than he can tell), then the drama of his life turns to tragedy, and makes haste to its fifth act. When once we thus fall behind ourselves, there is no accounting for the obstacles which rise up in our path, and no one is so wise as to advise, and no one so powerful as to aid us while we abide on that ground. . . . For such the Decalogue was made, and other far more voluminous and terrible codes.

Thus the poets, the great psychologists, who have vocabulary enough to speak to our secret hearts, so that our hearts instruct our minds. What they affirm is what we know—the fifty-one per cent of the truth that calls for both thought and responsibility—while we, most of the time, are deeply engaged in pursuit of the other forty-nine.

REVIEW
THE ORIGIN OF FORM

OF the making of books about science there is apparently no end, so that a reviewer must carefully choose the material worthy of report. A difficulty in making this choice is the specialized language of scientific investigators, who find it necessary to invent new terms for entities and relationships which seem to have no close parallel in previous research. Is this amplification of terminology a sign of progress, or is it a not-so-ingenious devising of scientific Jabberwocky? Clear evidence that the writer has done his best to use familiar words wherever he can is a favorable sign, encouraging the reader to learn the unfamiliar elements of his vocabulary to see if he is trying to tell about something that is indeed new, in science if not in philosophy.

A book which had this effect on the present reviewer is Rupert Sheldrake's *A New Science of Life* (Tarcher, 1983), first published in England in 1981. Sheldrake is a young biologist and plant physiologist who was drawn to study of the origin of form—form in both minerals and organic structures—as the primary mystery of all the life sciences and doubtless the key to the developmental processes we call "evolution." Readers with background in the work of scientists such as Hans Driesch, Edmund Sinnott, and the Yale studies of Burr, Nims, and Northrop in morphogenetic fields will particularly appreciate Sheldrake's concise survey of past research in the origin of form, and his cautious yet deliberate foray into the region of metaphysics will be of special interest to those who are convinced that only by adopting the doctrine of Platonic forms can organic development and processes finally be understood.

There is however another distinctive value in Sheldrake's book. It is a splendid illustration of how a resourceful mind uses the scientific method, while at the same time recognizing its limitations. If it is limited, why use it? Because, as he points out, scientific discovery and formulation have at least the opportunity to be converted into what we call "public truth," becoming thereby the basis of further discovery. Yet it may also be that intuitive insights, speculative thinking founded on metaphysical assumption, and even guesses issuing from analogy and correspondence are likely to become the basis for actual advances in scientific knowledge. An illustration of this would be the use made by Isaac Newton of the mystical conceptions of Jacob Boehme.

Present-day scientific thinking is largely an elaboration of the metaphor of the machine as an explanation of the processes of physics, chemistry, and living things. We know—or think we know—how a machine works, and since we delight in explanation (we don't have to think about *that* any more, and can go on to other puzzling questions), the popularity of machine accounts of how things work is wholly understandable. Sheldrake's book undertakes to show that the elaboration of form (probably) cannot be explained in full by the machine analogy, and then considers the remaining options available to us for explanation. He chooses one, "The Hypothesis of Formative Causation," of which the following is a brief account:

> The hypothesis of *Formative causation* proposes that morphogenetic fields play a causal role in the development and maintenance of the forms of systems at all levels of complexity. In this context, the word "form" is taken to include not only the shape of the outer surface or boundary of a system, but also its internal structure. This suggested causation of form by morphogenetic fields is called formative causation in order to distinguish it from the energetic type of causation with which physics already deals so thoroughly. For although morphogenetic fields can only bring about their effects in conjunction with energetic processes, they are not in themselves energetic.

To make the content of this paragraph at least *familiar*—which has to take place before the feeling of explanation can begin to suffuse the mind—one needs to know what is meant by "morphogenetic field." The first word means the

genesis of form, and the field is the area where the emergence of form occurs. The jar of super-saturated solution in which precipitation takes place, you could say, contains the field of crystalization. We leave Sheldrake's text for a moment to borrow help from Albert Einstein, the scientist most qualified to give explanation of the meaning of field:

> In the beginning, the field concept was no more than a means of facilitating the understanding of phenomena from the mechanical point of view. . . . The recognition of the new concept grew steadily, until substance was overshadowed by the field. It was realized that something of great importance had happened in physics. A new reality was created, a new concept for which there was no place in the mechanical description. Slowly and by a struggle the field concept established for itself a leading place in physics and has remained as one of the basic physical concepts. The electromagnetic field is for the modern physicist, as real as the chair on which he sits. (*The Evolution of Physics,* 1938.)

Then, reporting on the work at Yale by Burr and Northrop, a *New York Times* writer said:

> In the growing embryo, the electrical pattern develops hand in hand with the development of the whole organism. All else in the body undergoes constant change, the individual cells of which the body is made, excepting the germ cells, grow old and die, to be replaced by other cells, but the electrical architect remains the only constant throughout life, building new cells and organizing them after the same pattern of the original cells, and thus, in a literal sense, recreating the body. . . . This electrical field, having its own pattern, fashions all the protoplasmic clay of life that comes within its sphere of influence after its own image, thus personifying itself in the living flesh as the sculptor personifies his idea in stone.

One other element in Sheldrake's description of the morphogenetic field needs explanation. The form-producing field, he says, is "non-energetic." What does that mean? He means that it doesn't *do* anything physical, although it could be called the "formal cause" (Aristotle) of what happens. The cue ball in a game of pool is energetic. It transfers its energy to the ball which falls into a pocket. But the blueprint of a building by an architect doesn't itself do anything. A contractor is needed to convert its instructions into an edifice of masonry and wood. In this sense the morphogenetic field is non-energetic. But no form would appear without it.

The chapters of *A New Science of Life* are devoted to an examination of the evidence for "Formative Causation" in contrast with the evidence for other theories to account for the development of form. A short paragraph shows that the writer is not proposing a conception likely to lock future investigation in a closed-minded position:

> The origin of new forms could be ascribed either to the creative activity of an agency pervading and transcending nature; or to a creative impetus immanent in nature; or to blind and purposeless chance. But a choice between these metaphysical possibilities could never be made on the basis of any empirically testable scientific hypothesis. Therefore from the point of view of natural science, the question of evolutionary creativity can only be left open.

One final point about the value of this book: Determined mechanists often devise what they suppose to be ingenious theories of mechanistic causation to explain anomalies and contradictions of the machine principle encountered in experience. Sheldrake points out that the "model" of such explanations is no longer a machine, but some "metaphysical ghost" has been smuggled into it to perform its non-mechanical wonders. The book, in short, is both a valuable illustration of critical method and an example of freedom of mind in scientific practice. Finally, the author is nowhere guilty of extravagance in his reasoning or proposals. He is most of all an educator.

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A book not totally unrelated in subject to the Sheldrake volume is *Psi Development Systems* (McFarland & Co., Box 611, Jefferson, N.C. 28640, 1983, $24.95) by Jeffrey Mishlove. What is "psi development"? It refers, the author says, "to those processes by which individuals attain an increase in their experience of psi phenomena." What, then, are "psi phenomena"? Psi is the

twenty-third letter of the Greek alphabet and in modern usage it means the activity of the soul or mind independent of physical or what we think of as "natural" law. Telepathy or mindreading is a psi phenomenon. There are a number of other meanings, such as precognition (knowing the future in some particular respect), the movement of objects without physical means (psychokinesis), and the familiar forms of clairvoyance and clairaudience. Psi is now a familiar term due largely to the work of the late J. B. Rhine, of Duke University, and to the writings of his wife, Louisa Rhine. Rhine's classic book, *Extra-sensory Perception* (Bruce Humphreys) came out in 1934, putting its controversial subject on the map of scientific awareness and also the much larger area of popular interest.

Dealing with the possibility and with the possible methods of development of the psi capacity, Jeffrey Mishlove (in this published doctoral dissertation) gives a long chapter to the forms taken by popular interest in psychic abilities. Among them, in sequence, are Spiritualism, Theosophy, Rosicrucianism, Scientology, Transcendental Meditation, and various religious groups. Unfortunately, it is hardly possible for the author to treat critically of all these groups and their claims, so that his information about their practice and supposed attainments in psi remains second hand. He may, for example, have taken as authoritative the claims and statements of individuals who are not really representative of the original ideas of the groups they are presumed to speak for, as in the case of Theosophy. In this section, there is only a single passing reference to H. P. Blavatsky, and her teachings in respect to psychic powers are ignored, the citation and quotation concerning psi being from a work by C. W. Leadbeater, a figure involved in schismatic division among theosophists and a man of questionable character. Interestingly, in Louisa Rhine's *Psi: What Is It?* (Harper & Row, 1975) one chapter is devoted to "The Occult," making it clear that there are realities in this area which go far back into history; as she says: "the psi ability did not wait to operate until it was officially recognized by parapsychological research." Actually, the development of psychic powers has very little emphasis in Theosophy. They receive attention only as illustrations of natural human potentiality and not as immediate goals to be striven after. The popular area of interest in such development is indeed filled with pretensions and no doubt much fraud. Here the author has been misled by claims without ground, as in one statement about Theosophy: "Evolution of the personality is considered essential to psi development." Actually, in Theosophy, higher development is said to depend upon reducing the personality to a cipher.

Other chapters in Mishlove's book, summarizing the work of various parapsychologists, may be regarded as more reliable, since they deal with research under the restrictions of scientific method, even though such limitations may result in a failure to take into consideration factors which remain inaccessible to conventional investigation. The book, in short, illustrates both the advantages and disadvantages of modern research, and becomes of some interest for this reason.

COMMENTARY
A PANTHEIST IDEA

INTERESTING evidence that moral pressures give direction to scientific research is found in a fragment of eighteenth-century European history, made pertinent by this week's review of Sheldrake's *New Science of Life.* Searching for arguments against an extra-cosmic "Creator," the notorious materialist, Lamettrie, came across the work of a Swiss naturalist, Abraham Trembley, who had cut a polyp into several pieces, being surprised to find that in eight days each piece grew into a whole organism capable of reproducing itself. Lamettrie put this in his "infamous" book, *Man a Machine* (English translation, 1750), as proof that Nature is resourceful enough to need no designing "God"! His own opinion was that biological "atoms" produced forms by pressure on one another. Thus living bodies, whether animal or human, are simply machines developed by Nature herself.

Lamettrie was building his case for Atheism. "If Atheism were universally disseminated," he said, "all the branches of religion would be torn up by the roots. Then there would no longer be soldiers of religion, that terrible kind of soldier." The machine theory of biological processes was intended to replace the god-idea. Materialism would be our earthly salvation.

But a century and a half later the German biologist, Hans Driesch, claimed that exactly the same kind of evidence disproved the machine hypothesis. Soon after 1900 Driesch published his experiments with sea urchins, showing that any fragment cut at random from the blastula (an early stage of embryo) always grew into a complete embryo. He argued that the functions of protoplasm cannot be explained mechanically. The organism, he said is "a harmonious equi-potential system possessing a vital individualizing *entelechy* which works through matter with a view to the whole." Thus Driesch's proofs of vitalism were the same as Lamettrie's proofs of mechanism.

In Lamettrie's time, freedom-loving men saw in Materialism a highroad to Utopia, a social world emancipated from the horrors of religious wars and persecution. Thus modern materialism had originally a moral sanction. Today, materialism is increasingly recognized as filled with consequences wholly unanticipated in the eighteenth century, and as dangerous a scourge as bigoted religion. So the reading of scientific evidence is now changing; it points, as Sheldrake suggests, to a morphogenetic field—perhaps an Aristotelian *entelechy*—which guides development, a metaphysical and by implication pantheist idea.

CHILDREN
. . . and Ourselves

EDUCATION WORTHY OF OUR SPECIES

AN article by Jerome Bruner (reprinted in the *Intellectual Digest,* February, 1973, from the *London Times Educational Supplement,* Oct. 27, 1979), sent to us by a reader, calls to mind the historic contrast between two educational ideals—that of Robert Hutchins and the Gandhian conception. Hutchins declared, with considerable justification, that training for a line of work, a trade or profession, ought not to be confused with education. He said in effect that preparation for *life* means absorption in the lessons of philosophy—in short, the Socratic enterprise. The Great Books, he proposed, are the natural curriculum for such study. One may also need training for a job, but this should never be allowed to take the place of a liberal education.

Gandhi, on the other hand, held that the natural activities of self-support on the land—in India, where the bulk of the population pursues bare subsistence—make the ideal vehicle for education. An example of Gandhi's thinking is available from a collection of quotations published in *Gandhi Vigyan* for April, 1979:

> The boy under my scheme of Education does not go to school merely to learn a craft. He goes there to receive his Primary Education, to train his mind through the craft. I claim that the boy who has gone through the new course of Primary Education will make a better man than the one who has gone through the seven years of ordinary schooling. The new education is not a little of literary education and a little of craft. It is full education up to the primary stage through the medium of a craft. The eyes, the ears, and the tongue come before the hand. Reading comes before writing and drawing before tracing the letters of the alphabet. If this natural method is followed the understanding of the children will have much better opportunity of development than when it is under check by beginning the children's training with the alphabet.
>
> If the school has done its duty by them, boys of 14 should be truthful, pure and healthy. They should be village-minded. Their brains and hands should have been equally developed. Then would there be no guile in them. Their intelligence would be keen but they would not be worried about earning money. They would be able to turn their hand to any honest task that comes their way. They would not want to go into the cities. Having learnt the lessons of cooperation and service in the school, they would inject their surroundings with the same spirit. They would never be beggars or parasites.
>
> What kinds of vocation are the fittest for being taught to children in urban schools? There is no hard and fast rule about it. But my reply is clear. I want to resuscitate the villages of India. Today our villages have become a mere appendage to the cities. They exist, as it were, to be exploited by the latter and depend upon the latter's sufferance. This is unnatural. . . . And if the city children are to play their part in this great and noble work of social reconstruction, the vocations through which they are to achieve their education ought to be directly related to the requirements of the villages. So far as I can see, the various processes of cotton manufacture from ginning and cleaning of cotton to the spinning of yarn, answer this test as nothing else does. . . .
>
> My plan to impart primary education through the medium of village handicrafts like spinning, carding, etc., is thus conceived as the spearhead of a silent social revolution fraught with the most far-reaching social consequences.

Reflection, rather than comment, seems called for here. Apart from its practical side, Gandhi's program is aimed, as he says, at a revolutionary ideal. Here, the crafts have developed into complex forms of technology, and while "craftsmen" exist in America, what they make is seldom adopted in common use, but sold to the well-to-do almost as objects of art. In short, the problem of education seems far more complicated. Yet we should note that already there are centers, well developed in this country, where programs corresponding to Gandhi's conception of "village handicrafts" are available and even popular. We are thinking of the New Alchemy Institute on Cape Cod, devoted to all the crafts of subsistence for families and small communities on the land; the Land Institute in Salina, Route 3, Kansas 67401; and Ecology Action in Willits, Calif. (5798 Ridgewood Road, 95490.) Young from the cities as well as country folk are learning ecological ways of life at these places, and in their turn are participating in "a silent social revolution." That we

have a long way to go in this direction is obvious enough. Yet beginnings are being made. (And for how such efforts may alter urban life, see David Morris's *Self-Reliant Cities* as a source of cautious optimism.)

In his *London Times* essay, Jerome Bruner endeavors to close the gap between the two ideals—Hutchins' and Gandhi's—in his own way. He begins:

> In the last centuries, in response to the change of technology, we have come implicitly to the belief that choosing a vocation could be postponed till "later" while one trained the generalist in the skills that would serve in any vocation. But without vocation, intention becomes diluted and learning may fail. The young cry out about irrelevance, which is almost certainly a wrong diagnosis of their troubles. A better one would be "aimlessness."
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> Occupation is one of the major means whereby human beings integrate intentions toward a long-range goal and embed them in a hierarchical structure that defines priorities. The subjective definition of one's work is surely a major source of one's feeling of authenticity. Quite obviously, the two modes of defining work, the social and the personal, interact.
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> At one extreme, as Norbert Wiener put it, when work is organized in such a way as to be unfit for human production, the human being rebels or else risks becoming dehumanized. At the other extreme is the phenomenon of The Calling, where the structure of one's *life* and of one's *work* are indistinguishable.

There is something of an irony here. How many people can you think of who answer to Bruner's account of The Calling—people whose daily activity constitutes the meaning of their lives? It very nearly takes a hero to work at only what he believes in. An example might be Scott Nearing, who died last year, a few days after his hundredth birthday, on his farm in Maine. How many parents are ready to encourage their children to undertake Nearing's sort of commitment, in preference to a conventional career? Yet see Nearing's books, written with his wife Helen, before coming to a decision: *Search for the Good Life* and *Living the Good Life* (available from the Social Science Institute, Harborside, Maine 04642).

The young, however, are beginning to make such decisions for themselves. Writing of events in the sixties, Bruner says:

> . . . gradually there emerges a new form of role bearer: an intermediate generation, young adults and late adolescents, who take over the modeling roles, who set the tone of change, lead protests or run free schools, explore new enterprises or establish communes. Their skills and vocation are dramatically proclaimed, miniaturized to appropriate size and highly personalized. They are often daft, highly romantic or utopian, even at times absurd. An intermediate generation, nonetheless, is a response to the crisis of a change rate that outstrips the transition rate from one generation to the next. . . .
>
> What strikes one about the past decade is the enormous increase in the depth of play of adolescents and young adults—willingness to risk one's preferment in support of conviction or even of convinced whimsy: the professor's son off farming on a remote island, the doctor's daughter leaving medical school to help start an experimental daycare center, the successful young editor chucking everything and going off untutored to build a globe-circling boat; the myriad modes of "dropping out" to find oneself. . . . I would like to argue that in our transitional society, this phenomenon constitutes the very kind of push toward new occupations and hypotheses about life styles . . . and that the epidemic nature of the support that such actions command suggests how deep is the yearning for reformulation.

Bruner suggests two books on situations in which the young teach the young—*Letter to a Teacher,* Penguin. 1970 (reviewed in MANAS for April 4, 1973) and Riesman's *Children Teach Children* (Heron, 1970)—as showing what great things can happen when the young themselves assume responsibility for teaching. "I think," Bruner says, "the future inclines toward what I am proposing."

> We are living, I believe, in a time of deep revolutionary change. Tinkering with details of school organization without making room for a means of absorbing the wider revolution into our ways of educating is surely unworthy of us as a species.

FRONTIERS

Women's Hands; Patch Gardens

IN last summer's July-August *Resurgence*, Valentina Borremans, long an associate and collaborator of Ivan Illich, warns of a largely unnoticed effect on women of advancing technology, even advancing *appropriate* technology. She says:

> Organic agriculture, gobar gas, passive solar heating, but also arguably microprocessor-equipped knitting machines can be made subservient to either subsistence or to growth. Horticulture can be used by women to keep the household largely outside the cash-nexus and the market. On the other hand, it can also serve to multiply cash ties within the community, increase everyone's commodity dependence and to increase the cash flow.

From her experience in gathering material for her bibliography, *Reference Guide to Convivial Tools* (Bowker, 1979), she learned that women long ago developed tools peculiarly suited to female use. In their work they were not in competition with men:

> We easily forget that "work" which can be done indiscriminately by either men or women simply did not exist in pre-industrial societies. . . . No farm implement, no household utensil, no domestic animal in a pre-industrial society is handled indistinctly or used in the same way by men and women. Genderless tools are an invention of the 19th century, the tools in what is now called work.

Speaking of "aid" to developing countries, she says:

> For the last thirty years technical assistance has meant the export of a genderless work ethic, genderless tools and the destruction of gendered subsistence. But the elimination of gender-defined tasks and the creation of a mixed work force, within which men and women compete, has always hurt women. This process gives a chance to a few women, degrades many and brings these two groups into conflict with one another.
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> Let me say more about the destruction of gender. In every pre-industrial society, two distinct halves make up the local tool kit. Each community has its unique way of dividing the burden of existence, the grasp on reality, the use of time and space. Weaving, milking, potting are done either by her or by him. The same task in the same culture is never done by both. . . . I welcome tools that fit the hands of women as well as those of men. But I call for research in the sexist effects of genderless A.T. because, even more effectively than industrial machines, A.T. can transform proud women into handicapped humans of the second sex. Sometimes this cannot be avoided. But I see no reason for blindly promoting it. Only research *by* women in each village and neighborhood can ensure that the new wrenches and pliers, the new gauges and glues, the new fish tanks and hand mills, or a new breed of goats, above all empower the hands of women. Such research just cannot be done *for* a village by experts.

In the same issue of *Resurgence* Wes Jackson (of the Land Institute, Salina, Kansas) writes about Perennial Agriculture, which means food crops from perennial grasses and other plants that conserve the soil. After an account of the extensive contamination and loss of the soil of America as a result of present methods of agriculture, he says:

> Agriculture will remain a tragedy so long as it is kept separate from the problem of the human condition. . . . I don't believe that any solution which is more the product of civilization than the product of nature is trustable. We have to have both!

The plow-fertilize-and-poison scheme of the present is doing us in.

> Our current agricultural system is nearly opposite to the original prairies or forest which features mixtures of perennials. If we could build domestic prairies we might one day have high-yielding fields which are planted once every twenty years or so. . . . I think it is possible to return to a system that is at once self-renewing like the prairies or forest and yet is capable of supporting the current human population.
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> Because of advances in biology over the last half-century, I think we have the opportunity to develop a truly sustainable agriculture based on the mixture of perennials. This would be an agriculture in which soil erosion is so small that it is detectable only by the most sophisticated equipment, an agriculture that is chemical-free or nearly so, and certainly an agriculture that is scarcely demanding of fossil fuel. This is exactly what we are working on at

> our research center, The Land Institute. We are developing mixed perennial grain crops.

Speaking historically, Wes Jackson points out that mankind began gardening with what he calls "patch-type agriculture"—small gardens—but then the need for more food made the patches expand into fields. Field agriculture requires another sort of conservation, to keep the soil from washing away.

> We can get away with destroying a certain amount of nature's information and maintain high-yielding *patches* without restoring a slave economy. . . . At the patch level, both humans and nature can accommodate the products and makers of civilization in high-yielding annual crops such as rice, corn, wheat and soybeans, or carrots, spinach, broccoli, potatoes, sweet corn, green beans and the like. But when we move to the field level with any of these crops, we will want, if not need, slaves as we always have. They can be human slaves, fossil or uranium energy slaves, draft animal slaves, or fields themselves as slaves, for they would be the source of alcohol energy for tractor slaves or for the draft animal. Human slavery is out. Fossil or uranium energy will soon be going out, leaving the field as the energy source and the draft animal to help us.

But still, unless we learn some further lessons from nature, our land will inevitably wash toward the sea. Fields farmed as prairies, with the built-in soil retention power of prairie perennials and their sod-making roots, is the solution they are working on at the Land Institute.