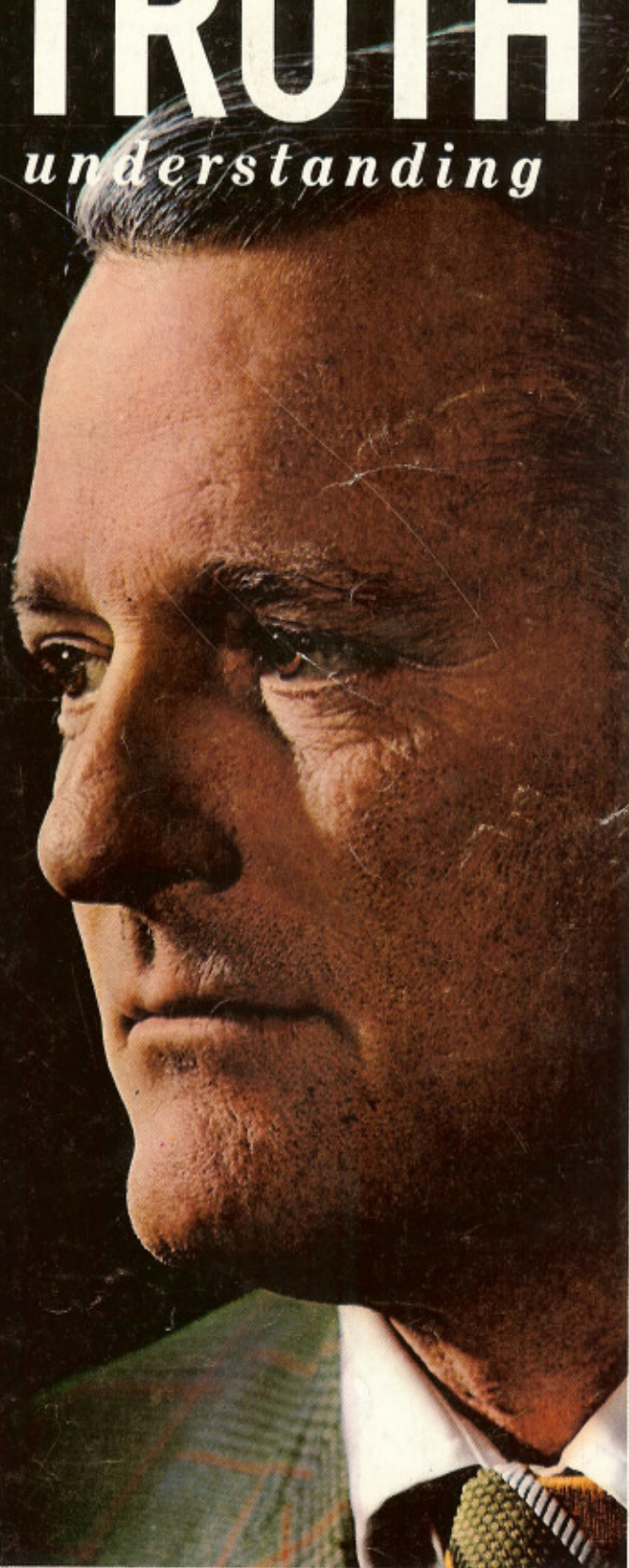


the
PLAIN TRUTH
a magazine of understanding



HUMAN MIND—

*Why So Vastly Superior
to Animal Brain?*





Why the vast difference between animal brain and HUMAN

The amazing complexity of animal brain (in the highest animals especially) is only VERY SLIGHTLY less, in size and quality, compared to the human brain. WHY, then, is human mind so TRANSCENDENTLY SUPERIOR to animal brain? Advanced studies in the new science of brain research have made significant progress toward unlocking the ultimate secrets of the awesome human intellect. This is Part I of an eye-opening and remarkable series of articles on a most fascinating and important subject.

by Robert L. Kuhn

MAN THINKS. At least he thinks that he thinks. But he knows. And he *knows* that he knows. Man is indeed unique — no other physical being is creatively self-conscious, nor can any other ponder the transcendental questions of life, death and ultimate purpose.

What is man? He *is* his *mind* — his *human mind* — which is of an immense capacity, able to comprehend the interrelationships of space, time, mass and energy. Animal brain, virtually equal in size and quality, has no such power.

The human mind has gone to the moon! It can write poetry, paint portraits, compose concertos. *It can investigate itself!* And these abilities are totally absent from animal brain.

... but Can't Solve Its Own Problems

Yet this same phenomenally unrestrained human mind, for all its complexity, intricacy, insight and foresight, *cannot* solve its own problems here on

earth. As a matter of fact, it was the human mind which *created* all these problems in the first place.

What an incredible paradox! The human mind — so great and yet so helpless!

Man does not know the way to peace — but he is blazing new trails to war. Worldwide well-being eludes him — as the explosions of population and pollution engulf him. Happiness is the well-worn platitude — but disillusionment and despondency are the commonplace reality. LOVE — or lust — is all too often a joke and hatred is the brutal truth. The human race is sitting on a time bomb that looks like it's going to explode. And soon!

The human mind — so great and yet so helpless!

Man is a phenomenal creature. But he has reached the end of his rope — his moment of truth has come, his time is nearly up. Man seems bent on self-extinction.

But is this *logical*? Does it make

MIND?

sense in the "great scheme of things" for the human mind to obliterate itself?

No longer can we afford the lackadaisical luxury of relegating this vital issue to suburban cocktail parties, freshman philosophy courses, and the proverbial bull sessions. No longer can we waste what little time we may have left by playing the role of the "cool" philosopher — as if we were uninvolved bystanders. No longer can we nonchalantly and condescendingly *assume* that this problem is insoluble. We have no choice but to consider it.

We need an answer *now*!

It is within this sobering context that we begin this series of articles on the question — the organization and purpose of the human mind. Not as an interesting study in physiology or psychology. *But as a matter of life and death for humanity!*

What Is Man? — What Is Mind?

What are we? Everything revolves around this one pivotal question.

Scientists, philosophers and theologians have been locked in debate from time immemorial. But the time for debate is over. We must know. Our very *survival* hangs in the balance as this fundamental issue is weighed.

The crux of our inquiry will be:

What is the HUMAN mind? How does it differ from ANIMAL brain? Does human thought differ from animal instinct in *degree* (quantitatively) or in *kind* (qualitatively)?

What is the relationship between man's mental activity and his physical

brain? What is "mind"? What is "brain"? Are they exactly the same — "the mind" being just another name for "the brain"? Or are they different — "the mind" being something *more* than "the brain"?

These questions are crucial. And we seek answers which are both scientifically founded and philosophically secure.

Overall Outline

We will investigate the relationship between mind and brain by comparing and contrasting human beings and animals. We will do this on two levels:

- 1) *mental activity*;
- 2) *physiological brain*.

In the remainder of this article and also in next month's, we will analyze the similarities and differences between the *mental activities* of humans and animals. For the remaining two articles, we will analyze the similarities and differences between the *physiological brains* of humans and animals. Finally, we will put it all together by *correlating* the two — coming up with an answer of enormous significance.

Present Objective

In these first two articles, we focus only on *one part* of the problem: We compare the mental activities of humans and animals. We ask the materialist's favorite question — "*Is the human mind REALLY different from animal brain?*" — and proceed to detail a scientifically rigorous answer. The question can be phrased in a more



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scientific and precise manner: "Is the input, output and intervening mental activities of the human brain qualitatively different from the input, output and intervening mental activities of any and every animal brain?"

However it's phrased, the question is fundamental. Because if the human mind is *not* qualitatively, uniquely and even radically superior to the output of animal brain, then man *would* be just another animal — with little hope for species survival.

Yet this is precisely what the materialist seems compelled to prove — that *THE HUMAN MIND IS NO DIFFERENT FROM ANIMAL INSTINCT*.

Does this claim sound ludicrous and absurd? *It is not*. The materialist is prepared. He has done his homework and has some carefully reasoned arguments. And even though he is motivated by a pre-packaged ideological bias, we must ask: *Could he be right?* Many people — religious people for the most part — intuitively "feel" that man "must be" unique and easily distinguishable from all animals. But that "feel" does *not* prove the point. In fact, religious ignorance, however sincere it might have been, has been the food by which materialism has been nourished.

What Materialism Propounds

It is our responsibility to present the tenets and arguments of materialism as accurately and as forthrightly as possible. Then, and only then, can we confidently begin to analyze them and discern whether or not the obviously unrestrained human mind *is* utterly distinct from the seemingly stereotyped animal brain.

The materialist clings to a fundamental axiom: He claims that humans think pretty much the same as animals do — that the psychological (individual) and sociological (collective) accomplishments of human beings are *not* qualitatively different from those of the animal kingdom. We present a typical materialistic argument:

"All the qualities," says the materialist, "customarily considered 'uniquely human' are merely the highest psychological manifestations on the present physiological continuum — and are in

The Dogma of Materialism

THE DOGMA OF MATERIALISM declares that only "the physical" is real — the possible existence of non-physical reality is categorically rejected. Materialism teaches that "mind" is simply the totality (Gestalt) of physiological brain function. Consequently, "the mind" would be just "the brain." And nothing more! Just the complex output of the most advanced mammalian brain!

The materialist believes that *all* psychic processes are entirely the product of multitudinous electrochemical changes in the nervous system. "Mind" is therefore viewed as an *epiphenomenon* — a *secondary* phenomenon ("mind") which does not maintain an independent existence of itself, but is actually the shadowy by-product of another, *primary* phenomenon ("brain").

Consequently, the human mind would be merely an artificial categorization or an artificial extrapolation of the physical human brain.

As a matter of fact, the materialist might well condescendingly remark that the term "mind" itself is quite confusing and completely unnecessary — having been "invented by primeval man to superstitiously explain what he could not yet physically comprehend."

One semi-sarcastic but revealing analogy used by extreme representatives of materialism is that "human mental thought is the product of human brain function in the same way that human urine is the product of human kidney function." Many evolutionary scientists, who by their own definition concern themselves

exclusively with the physical, epitomize that attitude.

We are not finished describing materialism — we still have a problem. Granted — materialism promulgates the idea that only "the physical" exists.

But — *what is* "the physical"?

That might seem like a ridiculous question to some. Nonetheless, many people lose much sleep over it. The materialist might define "the physical" as "everything" — which would just be circular reasoning. The non-materialist might define "the physical" as everything which is *not* non-physical — a double negative and another example of circular reasoning in the raw.

It is difficult to define "the physical" to everybody's satisfaction. We offer the following attempt:

"*The physical* is anything which must be defined in terms of mass, energy, space, time and/or mathematical formulations. Included within this definition — in addition to all particles, forces, distances between objects and intervals between events — are all physical laws such as gravity, inertia, etc., all electromagnetic phenomena, all applied mathematical conceptions such as entropy, antimatter, tachyons, etc., and all pure mathematical abstractions such as real and imaginary numbers, sets and matrices, *n* dimensional geometry, transfinite mathematics, etc."

Note that our definition makes "the physical" a "closed system." But a closed system which can affect another system and which can be affected by another system, *if* indeed another such system — a non-physical system — should exist.

reality represented in other highly complex animals." (Which is a technical way of stating the materialistic dogma that human mental activities are *not* all that different from animal mental activities.)

The materialist continues by asking, "Why do these traits *appear* to be 'uniquely human'?" He answers his own question: "Simply because they are enhanced and exaggerated by the full-range *means of expression* available to man, but are not developed in lower animals." In other words, all human mental processes differ from their *precise* counterparts in animals only be-

cause of man's ability to write, speak, compose and draw — abilities which in themselves are just *improved* techniques of expression, and are *not*, if we care to admit it, limited to human beings."

Materialists will readily admit that mankind has a phenomenally large intellectual and technological capability — as evidenced by the full scope of 20th-century society. They vociferously maintain, however, that all these impressive accomplishments are actually the product of many generations of *accumulated knowledge*. As a result, material-

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Human Mind Versus Animal Brain: Materialism Says No Basic Difference

ONE COGENT example of materialistic reasoning would frame the following scenario:

"If a group of babies somehow managed to survive to adulthood in complete isolation from the rest of society, they would not have the benefit of educational institutions, libraries, rules, traditions, legends, or even language. And as a result, they wouldn't get much accomplished. Rather, they would spend their time scratching their naked bodies, hunting for food, running from fire, grunting, shouting, lust, mating, beating their chests, and hiding from thunder. These people would not invent airplanes, telephones, guns, pianos, ballpoint pens, heart-lung machines, razor blades, or even paper cups. They would probably display fear, rage, greed, lust, affection, wonder, awe. But they would *not* display much of what we have come to know as aesthetic appreciation or intellectual achievement. Their actions would not greatly differ from chimps.

"Man has, however, managed one important difference from the primates — his ability to pass on information from one generation to another. Therefore [reasons our good materialistic friend] to compare modern man with chimp can be most misleading. It's like comparing two frogs, one that can jump *eight* inches and one that can jump *ten* inches. There's not much real difference — but on a stairway of *nine-inch* steps, one frog will leave the other far below. It is easy to be misled by appearances."

We agree. The "two frogs on the steps" analogy epitomizes the entire scope of materialism's main point. It propounds that the fundamental difference between the mental output of man and the mental output of animals is deceptively minor. But this minor difference — in whatever reference system this "minor difference" exists — exceeds the crucial *threshold* for mental advancement.

The analogy of the "two frogs on the steps" applies here. It explains how the concept of "threshold" applies to the problem of the relationship between human and animal

mental activity. The frog which can jump only *eight* inches can *never* reach even the second (*nine-inch*) step, whereas the other frog, which can jump a bare two inches *higher*, can eventually hop to the top of the thousands of steps in the Empire State Building. (*Nine* inches is, in this example, "the threshold.")

Consequently, a triumphant materialist points out, if a "non-materialist observer" came along near the end of this process and saw one frog at the bottom of the first step, continuously jumping up, hitting its head on the second step and falling back down to the first step, and then compared this frog with its companion frog who was merrily vaulting step after step on the 100th flight of stairs of the Empire State Building, the non-materialist, being rather naïve, would probably come to an erroneous conclusion. He might well postulate that since both frogs were nearly identical in structure and function, the leaping frog, hundreds of feet above its fellow frog, "must be vastly superior" — and this "vast superiority must be due to a vastly superior brain-mind capacity generated by some non-materialistic factor."

"This deduction," sarcastically comments the materialist, "may seem absurd." And it is. "But," he continues, "religionists casually reach just such an absurd deduction regarding the supposed 'unbridgeable gap' separating the mental activities of man (the vaulting frog) and chimp (the head-hitting frog)." The deduction is absurd (naïve would be a nicer word) because the concept of "threshold" is overlooked.

The materialist proclaims that here lies the simple, *wholly physical* solution: The one (man) has *exceeded* the crucial threshold — which is the capacity to pass on information from one generation to the next — and the other (chimp, dolphin, etc.) *has not*.

And this, not some ethereal non-materialistic factor, is the *only* difference between the two, concludes the materialist.

But is his view correct? Or is the materialist overlooking something vital? He is considering brain *output* and cumulative knowledge passed on from one generation to the next.

But he is ignoring brain *input*.

Take, for example, the illustration of the group of babies who survive to adulthood in complete isolation from the rest of society, without benefit of the accumulated knowledge by preceding generations.

What would be lacking would be knowledge input. And without it, they would, it is falsely assumed, grow up much like apes or chimps.

Animal instinct causes new-born animals automatically, without teaching or learning, to do what they need to do. But a new-born human baby, of itself, is utterly helpless. It is born with a human MIND, as yet *unfilled* with knowledge. It does *not* come equipped with the same kind of instinct as the new-born animal. It must be taught — or learn — *EVERYTHING*. And as he grows, the human being must guide his actions by his mind — through brain input, — through knowledge taught or learned — not by instinct.

The new-born calf is on all fours and walking, in about five minutes. The new-born human *learns*, or is taught, to walk — in about a YEAR. The new-born calf starts walking. It is not taught. It walks by instinct in order to fulfill a need for its mother's milk. The human baby must also be fed, and taught in time to eat.

Now, reverse the materialist's original illustration. Take a group of chimps, apes, elephants or dolphins — newly born. Try to *TEACH* them, as humans are taught from birth. Give *them* the advantage of accumulated HUMAN knowledge. At the same time, take this group of human babies, and give them the same teachings of accumulated human knowledge, a little at a time, at whatever rate the child's brain is capable of absorbing.

By age 18 the human boys will know more than their fathers — or *think* that they do. By age 18 how much knowledge (INPUT) will the chimp, ape, elephant, or dolphin, have received?

The human MIND is capable of learning — of receiving knowledge — and *USING IT* — in a manner that leaves a VAST GULF between it and the virtually equal (in size, weight, and quality) and most complex animal brain.

ists reason that man's innate abilities are not as great as they first seem — and that man is merely a mentally advanced animal.

The Burden of Proof

So the onus and the burden of proof falls on the shoulders of the *nonmaterialist*. The facts must be *scientifically* established. Nothing less than rigorous reasoning will be tolerated. To begin, we review materialism's main tenets:

1) The output of the human brain — if unprejudicially measured by the *real* accomplishments of individual human beings — is *not* qualitatively distinct from the output of animal brain.

2) Those mental activities labeled "uniquely human" are just the result of improved techniques of expression.

3) Man's intrinsic mental abilities are not as great as they first seem — they are just *barely* superior to the mental abilities of the higher mammals such as chimp and dolphin.

4) The simple capacity in humans to pass on information from one generation to another has *artificially* generated the appearance of a huge gap between the psychological and sociological creations of humans and animals.

5) Human mental activity is purely the refined product of evolving animal instinct.

6) Human beings are animals.

Are these statements true? Is human mental activity just *quantitatively* — and just *barely* — superior to animal mental activity? Or is the difference *qualitative* and *fundamental*? Is human mental activity purely the refined product of evolving animal instinct? Or is it something more?

Does there indeed exist an unbridgeable gulf between the unrestrained higher mental abilities absolutely unique to human beings and the compulsive "higher mental abilities" characteristic of all mammals? The eminent mathematician and philosopher, J. W. N. Sullivan, as an example of many, concluded that "a great gulf separates even the lowest races of mankind from the highest living animals."

But can it be *proven*?

This is the question.

What's NOT Unique About the Human Mind

We are now ready to scientifically test whether the human mind is fundamentally and radically different from animal instinct.

In all fairness and completeness, we must first present the psychological *similarities* between the mental abilities of man and animals. Because if we are to successfully *differentiate* the human mind from animal instinct, we must *really* differentiate the two. Not a superficial, self-convincing differentiation — but a *real* one! To do this, we must *carefully* determine which characteristics are *shared* by animals and humans alike, and which characteristics are the *exclusive* property of human beings.

The average person might well assume that "*obviously* human mental activity is vastly superior to animal instinct — humans have *intelligence* while animals do not — why all the fuss?" Such a simple-minded assumption lends credence to the materialist's argument that animal and human thought patterns lie along the same continuum! Because indeed animals and humans *both* can have "intelligence." This assertion is, of course, wholly dependent on the precise meaning of the word "intelligence."

We must recognize that word-concepts such as *intelligence, memory, thought, sensation, perception, emotion, learning, awareness, consciousness, personality, behavior, communication, etc.*, are all included in the materialist's definition of *animal* mental activity! Surprising? *Not* to the astute materialist. But he has also *thought* about the problem. Remember, the difficulty is one of *semantics* — a problem of establishing the exact definitions of complex and highly subjective word-concepts.

Carefully note that the above-mentioned mental similarities between man and animal have been generally thought, by uninformed laymen and sincere religious professionals, to be unique characteristics of the human mind. Now it is certainly true that these shared mental qualities *mean much more to the human mind* than they do to animal brain. Of course! But that does *not* change the basic fact that *both*

the human mind *and* the animal brain *do share* these mental attributes. Therefore it is logically *impossible* to use them for the purpose of differentiating the human mind from animal brain.

To try to use the simple word "intelligence," for example, in any attempt to prove that the human mind is vastly superior to animal instinct would only confuse and undermine the entire case. Consequently, we must discard all qualities of the human mind which are in reality also qualities of the animal brain. We must be circumspect in our analysis. We must not be biased. We must be rigorous in our logic.

As another example, the materialist confidently contends that "memory, personality and consciousness" can be completely explained as the output of the physical brain alone. The non-materialist, as expected, finds himself on the other side of the fence, vehemently disputing the contention.

What about it? Are memory, personality and consciousness unique attributes of the human mind? Or are they found in the animal kingdom? Again, it depends on the precise definition of these word-concepts. Because, for one thing, the materialist claims that an *artificial* system of electro-mechanical mechanisms — nuts and bolts (robots), transistors and wires ("computers") — can *simulate* (artificially *imitate*) memory, personality and consciousness. And he is right! That *can* be done — depending, of course, on how the words are defined.

So if a robot and a computer can do this, how much more the living animal brain! Memory? Personality? Consciousness? There's nothing here that's unique to the human being.

Where does this leave the non-materialist — like the traditional religionist? In trouble!

One must reject the simple-minded *approach* of those well-intentioned religionists who are not aware of current scientific data and methodology. But we can not necessarily reject all the religionists' conclusions — *because the human mind is radically different from animal brain* — as will be illustrated in next month's article.

Thus far, we have seen examples of
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open for them to stage a two-pronged advance down the Arabian peninsula on the one side and into Africa by way of the Suez Canal on the other.

"What more alluring temptation can one give," asked the Shah, "to those who perpetually talk peace but, judged by our own experience, do not necessarily believe in it or practice it?" (*ibid*, page 313.)

The loss of Iran's vast oil reserves alone would be an almost incalculable calamity to Western Europe as well as to Japan!

Force for Peace?

There are definite indications that Iran is setting her sights on becoming the most important and influential country in the sweeping arc of nations extending through the Middle East to the western borders of India. If possible, she would like to play a mediating role in the Arab-Israeli conflict. Islamic, but non-Arab, Iran presently enjoys cordial economic relations with Israel.

An official publication, *Iran in the Seventies*, concludes by saying: "Thus, Iran represents the strongest force for peace and stability in the Middle East.... The country's important geographical and strategic position, immense natural resources, large industrious population, rich historical and cultural tradition and her remarkable economic progress, all point to the likelihood that in the 1970's, Iran will regain her former importance as a crossroads between East and West and as a principal civilizing influence in the Near and Middle East."

The big question for the future is the same as that asked many times in the past. Will the crossroads be used for peace — or for war?

Iran is a showcase of progress in a world that is beset with seemingly unsolvable problems. But it is also a nation which finds itself in possession of a vital piece of geopolitically important real estate. It would be tragic indeed if Iran once again became the threshing floor of conflict.

Hopefully, Iran can avoid the waste-fulness of military conflict and can continue to instill yet greater reforms for its 30 million industrious people. □

HUMAN MIND

(Continued from page 6)

what *cannot* differentiate humans from animals. Now, what *CAN*?

The Uniqueness of the Human Mind

It is time to examine the evidence and to demonstrate what could only be stated — without proof — in the past:

That the uniquely unrestrained human mind IS unequivocally distinct and irrevocably dissociated from the instinctively automatic animal brain.

That MIND is far different from BRAIN.

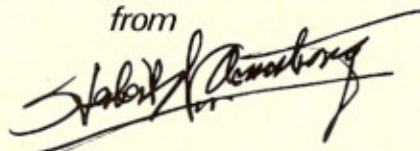
That humans are NOT animals.

The materialist waits — he knows we cannot use intelligence, memory, behavior, consciousness, etc.

What has he overlooked?

(To be continued)

Personal from



(Continued from page one)

as well. He therefore enrolled in the University of Southern California Law School, graduating in 1962, first in his class, Order of Coif, contributor to *Law Review*, and President of the Student Body.

His outstanding record in law school attracted the attention of the nation's most prestigious universities. Yale University awarded Mr. Rader a Sterling Fellowship, other universities offered attractive tenure on Law School faculties. Flattering offers came from leading law firms throughout the United States, and from government agencies. Yet his confidence in the Ambassador College worldwide program did not waver. That's where his heart was.

He did teach two years at the U. S. C. Law School, and, becoming a member of the bar, practiced law for some time in Los Angeles. Also for some two years he taught classes in accounting at Ambassador.

He now heads an advertising agency.

But Ambassador College, in its worldwide Extension program of education for all peoples at all levels, has been claiming an ever-increasing amount of his time.

Mr. Rader's Role

Mr. Rader is of inestimable value to me, in accompanying me in meetings with the many heads of state around the world the past year and a half. He is proficient at speed-reading, helping brief me on facts I need before each meeting. I have not been able to see with my right eye for ten years, and my left eye has been for years (before my right eye went out) my weaker eye. Also I am slightly hard of hearing. In an important conversation, Mr. Rader will often repeat what the other said, when he perceives I did not quite grasp it. He has an exceptionally retentive mind. Without taking notes during a meeting, he afterward types out for me a complete transcript of the entire conversation, as accurately as if it had been tape-recorded. Being unusually knowledgeable on world affairs, he is able, with me, to enter into the conversation in a most helpful manner. And beside all this, being a considerably younger man than I, he takes care of so many things, like hotel reservations, checking out at hotels, tipping, etc.

I know our readers are interested in personal information about persons holding important responsibilities in our work, as well as in these momentous world happenings. So I have taken this opportunity to brief you somewhat on Stanley Rader, since he is so often mentioned in connection with important meetings I have held. Mr. Rader plays both golf and tennis, is a family man with a very close family relationship, the father of a son and two daughters, happily married for many years. Since we have our own jet aircraft (I could not make these many important trips otherwise) Mrs. Rader is usually able to accompany him, and my elder daughter, now alone, accompanies me, taking her mother's place as hostess for me where dinners, receptions, or social occasions occur. My wife, Loma D. Armstrong, died almost five years ago, after fifty years of happy marriage.

But now back to our visit at United

Why the vast difference between animal brain and HUMAN MIND?

by Robert L. Kuhn

PART II

In the January issue, and now in February, we analyze the similarities and differences between the *mental activities* of humans and animals. We ask: Does human *thought* differ from animal *brain* in *kind* (qualitatively) or in *degree* (quantitatively)?

In the March and April issues, we will analyze the similarities and differences between the *physiological brains* of humans and animals. We will ask: Does the *human brain* differ from animal *brain* in *kind* (qualitatively) or only in *degree* (quantitatively)?

Finally, in May, we will correlate the two — mental activities and physiological brains — and begin to answer the ultimate question: What is man?

WHAT IS MAN? What is the human mind? What is the relationship between man's mental activity and his physical brain?

Is "mind" the same as "brain" — or is it something more?

We began last month by asking these all-important questions.

This month we continue our investigation of human beings and animals. We do this on two levels: 1) *mental activity*, and 2) *physiological brain*.

In these first two articles, we focus on the materialist's primary point: that the human "mind" is *not really* different from the output of animal brain.

In the *previous* article, we discussed those mental characteristics which the materialist uses to show that humans *cannot* be differentiated from animals.

In *this* article, we show how humans *can be* differentiated from animals — that indeed the human mind *is* unequivocally and irrevocably distinct from animal brain. We will answer the following question: *What mental characteristics clearly differentiate the output*

of the human mind from the output of animal brain? And we will demonstrate that these characteristics, as described in the following sections, are utterly unique to human beings and are not found in *any* animal.

We must now define and examine in detail *each* mental characteristic. We must demonstrate *why* the human mind exhibits each one of them and *why* the animal brain does *not*.

Some of the areas will overlap. Don't let that bother you. Consider each as a distinctly individual expression of the *uniqueness* of the human mind. But don't just passively agree. *Think* about it. This is serious business.

The human mind is far superior to animal brain.

But this will not be easy to prove. Because all of these mental characteristics are subject to as many interpretations as there are minds to read them. Why? Part of the difficulty is *semantics*: What do these often-repeated and much-abused words really mean? The other part of the problem

is preconceived ideas: What is the particular bias of the individual evaluator?

We are interested in *truth*. And, in truth, *man is NOT an animal*.

But *prove* it.

1. AESTHETICS

Expression of Humor

Laughter is uniquely human. Comedy has no equivalent in the animal kingdom. This is openly admitted by many evolutionary psychologists. Darwin reasoned that the smile had evolved from the animal *snarl*, ignoring the opposing meanings.

What is humor? How can it be defined? It is difficult to put into words. Yet nothing is more easily understood by every human being.

Humor necessitates the comprehension of an odd or *incongruous* situation. When we laugh, we are comparing what *did* happen with what normally *would have* happened under similar circumstances. To impute the sense of *incongruity* to such an occurrence, we must be sufficiently detached from the situation. Animals often react to unexpected events — such as a cat playing with a ball of string — and although that may be funny to the human observer, it is surely not funny to the animal. (The kitten is actually practicing catching prey. It sharpens its reflexes and perfects its skill for the unexpected twists and darts of the mouse it will later catch.)

Animal brain does not become detached enough to reflect upon any unexpected event as incongruous, and therefore cannot appreciate humor. (The laughing hyena is *not* really laughing.)

Appreciation of Beauty

Beauty, to be beauty, must be appraised on its own merits — not for any possible relationship to a future reward. A beautiful sunset, woman, painting or sonata may well be associated with sensual satisfaction — but that association is not necessary. Beauty can exist irrespective of any functional value.

Beauty cannot be beauty in its true human sense if there is some other "payoff" which is making it "beautiful." The animal considers only the potential fulfillment of its basic drives



Wide World

THE AGONY AND THE ECSTASY — Two beauty contestants here reflect two all-too-human reactions: the pain of defeat and the exhilaration of victory.

and needs — food for its hunger, water for its thirst, etc. "Beauty" in an object or goal contributes nothing to the appeal.

The appreciation of beauty requires quiet, perceptive contemplation. Aesthetic pleasure *more* than supersedes sensory stimulation, it demands the *inhibition* of such extraneous stimuli. Could any animal ever ignore drive-satisfying stimuli — food, water, sex — to focus on a beautiful sunset?

Beauty is a whole, more than the sum of its parts — an organic unity derived from underlying order and harmony. It is an abstract integration which is privately perceived and subconsciously blended within the individual psyche. Beauty is recognized only by man.

Feeling of Ecstasy

Is the ecstasy experienced from listening to the last movement of Mahler's Second or Beethoven's Ninth Symphony just the evolutionary advancement of the basic animal desire to satisfy the self, or to be a bit more technical, "the sophisticated enhancement of animal drive reduction"? This is what some skeptics think.

What about the ecstatic reaction experienced by millions when the New York Mets won the 1969 World Series? Was that simply the "enjoyment" of gratifying a physical urge? Hardly.

The most "ecstasy-like" reaction in an animal occurs when a male gets excited as he senses a female in heat.

But any comparison to human ecstasy is absurd. Ecstasy, by definition, must *transcend* specific sensations and satisfactions. It is, rather, the instantaneous emotion of supreme exultation.

2. SELF-AWARENESS

Self-Consciousness

The *self-consciousness* of man may not at first seem to be very different from the *consciousness* of animals. But the difference between the *self-consciousness* of man and the *consciousness* of animals is perhaps *the most crucial* distinction between the human mind and animal brain.

We all know what consciousness involves — thought, planning, decision, action, reaction, feedback, new thought, etc. — and indeed *animals are conscious*. But *self-consciousness* is one extra step — the critical jump.

Self-consciousness is the conscious awareness of the process of being conscious.

It demands the innate ability to observe our own minds in action. It requires the awareness of "I."

Who but man can step back and become a spectator, an inquisitor, a critic or an admirer of his own thought patterns? Who but man can watch the spectacle of his *own self* go through the machinations and manipulations of mental deliberation?

The noted psychiatrist, Erich Fromm, put it this way:

Man has intelligence, like other animals, which permits him to use thought processes for the attainment of immediate, practical aims; but man has another mental quality which the animal lacks. He is aware of himself, of his past and of his future, which is death; of his smallness and powerlessness; he is aware of others as others — as friends, enemies, or as strangers. Man transcends all other life because he is, for the first time, life aware of itself. Man is in nature, subject to its dictates and accidents, yet he transcends nature because he lacks the unawareness which makes the animal a part of nature — as one with it.

The self-conscious human mind constantly monitors itself in action — and at any moment, for any reason (even for “no” reason), it can stop or alter the action which would have been predetermined by the animal brain in the same exact circumstances. Perhaps the closest way to approximate how an animal “feels” when carrying out its thoughts and actions is the way a sleep-deprived, drugged or hypnotized human would feel when carrying out some simple physical task at the command of another person.

We continue with Theodosius Dobzhansky, a famous biologist:

Self-awareness, or conscious awareness, or mind, is by far the most important of the characteristics which make man human, and yet it also is by far the most difficult one to study scientifically. The anthropologist D. Bidney (1953) gave the best statement known to me of what this characteristic is all about, and it is best to quote him directly: “Man is a self-reflecting animal in that he alone has the ability to objectify himself, to stand apart from himself, as it were, and to consider the kind of being he is and what it is that he wants to do and to become. Other animals may be conscious of their affects and the objects perceived; *man alone is capable of reflection of self-consciousness, of thinking of himself as an object...*”

The majority view is, however, that “mind” is a four-letter word which should not be uttered among well-bred scientists. This is, however, too easy a solution, which fails to solve problems too obtrusive to be ignored. No matter how eloquently somebody may argue that my self-awareness is just an illusion, I know, with an assurance greater than I have about anything else in the world, that my self-awareness is the most compelling of all realities.

Awareness of Death

Man knows that he is going to die. You know it. And I know it. That's rather remarkable all by itself.

Death seems illogical and absurd to a rational, vibrant human being. Yet every man knows, as sure as he knows anything, that his scant few decades of self-conscious life will be followed by a cessation of that life.

Death! This stark reality is what a man realizes throughout his life — while animals remain blissfully ignorant. The difference is fundamental.

For Dobzhansky this distinction is made manifest by the way in which animals care for their dead: They don't!

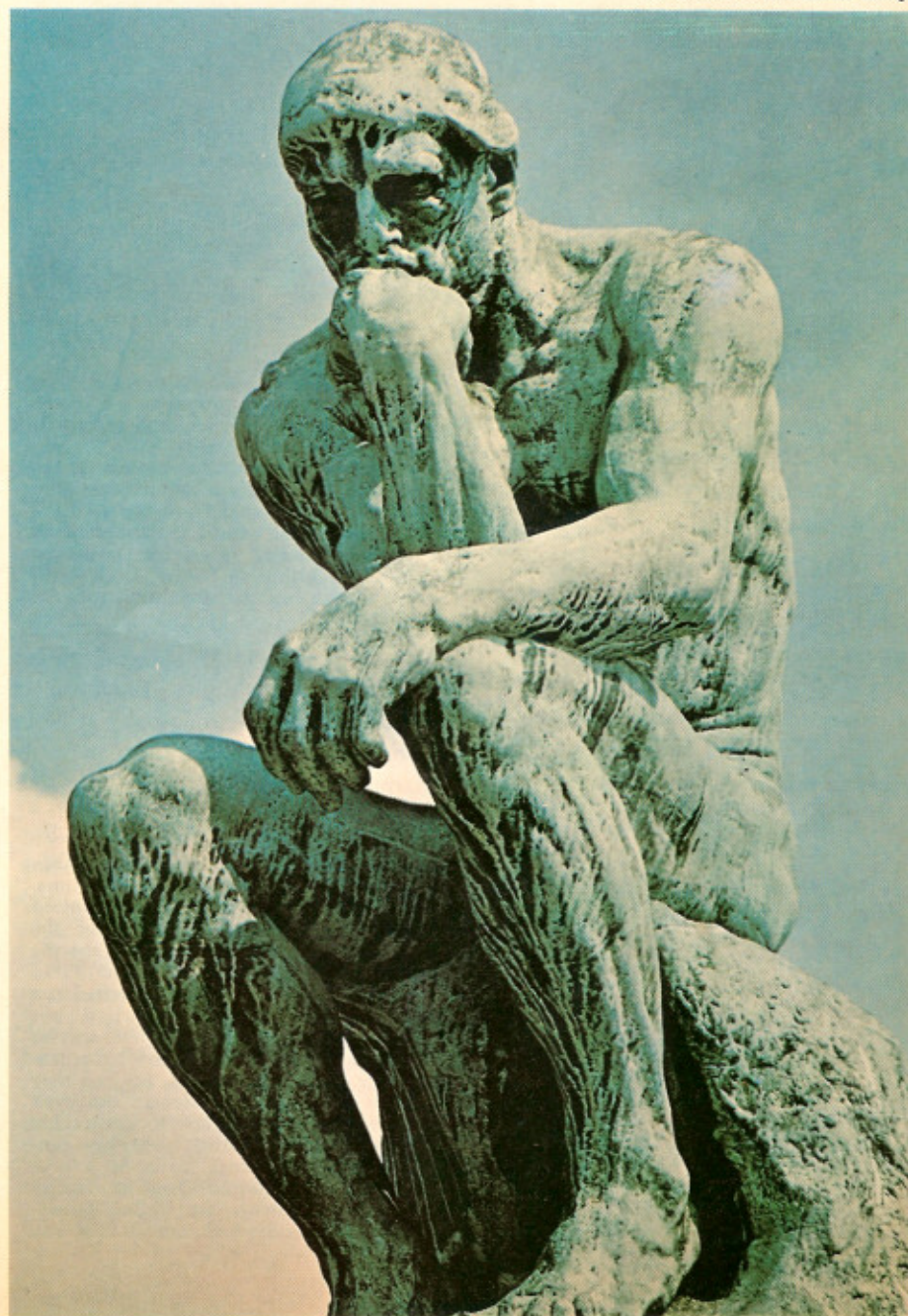
Burial of the dead is a cultural universal in mankind. The burial rituals vary widely, from interment to cremation or exposure to predators or birds of prey. No known human group does, however, simply throw out its dead without any ritual or

ceremony. *In stark contrast, no animal practices burial of dead individuals of its own species.* Ants throw the dead out of their nests together with other rubbish. Female monkeys may stubbornly carry their dead and even decomposed infants. Some animals practice cannibalism and necrophagia. None of these forms of behavior suggest burials.... The contrast between the human concern for the dead, and the unconcern shown by animals, is, however, *so glaring* that an explanation is called for. The explanation that suggests itself is that man, and man alone, knows that death is inevitable....

Thinking in Time

As he is climbing a tree, a chimp probably “knows” that he will soon pick a banana, and that immediately thereafter he will peel it, bite it, chew it, swallow it and satisfy his hunger.

Hendrickson — Ambassador College



The chimp is thinking some minutes into the future.

But how long can an animal think into the future? Do animals think ahead to their future migrations or hibernations — or do they only react to the stimuli at the appointed time?

In either event, animal brain is still limited — it *thinks in the sphere (domain) of time only in relation to itself.*

The uniquely unrestrained human mind is totally different. It can envision the absolute certainty of an *eternity of time* — both before and after its own particular existence. This ultimate awareness may express itself in an awareness of death. But it is not limited to an involvement of the self. Economists and sociologists are visualizing the 21st century. Astronomers have calculated the number of billions of years it would take for the sun to become cold.

As the eminent ethnologist, W. H. Thorpe, states, "Man has a language which can denote and specify the past and the future far beyond his own life span." It was Dostoevski who wrote: "Man needs the unfathomable and the infinite just as much as he does the small planet which he inhabits." And what animal could ever comprehend enough about the concept of past and future epochs of time to wonder what the 17th-century philosopher, Blaise Pascal, wondered:

When I consider the short duration of my life, swallowed up in the eternity before and after, the little space which I fill and even can see, engulfed in the infinite immensity of spaces of which I am ignorant and which know me not, I am frightened and am astonished at being here rather than there; for there is no reason why here rather than there, why now rather than then. Who has put me here? By whose order and direction have this place and time been allotted to me?

Here, then, is the human mind — racing through the endless corridors of time before and beyond its own life span, wondering, speculating, searching.

3. THINKING AND COMMUNICATION

Abstract Thinking

Thorpe expressed it well:

What are the features in which man differs from the animals? ... man can internalize relations perceived in the

external world to a vastly greater extent than the animals. In other words, man can manipulate completely abstract symbols to an extent far beyond that possible in the animal world; it's on this ability mathematics is based. I do not believe that animals will ever be able to do mathematics....

As far as we know for certain, no animal language, however much information is conveyed, involves the learned realization of completely general abstractions.

Connections Between Words

The great linguist, Eric H. Lenneberg, shows that humans not only understand the symbolic meaning of sounds — which animals may also do — but humans also construct and identify *the relationships between* these symbolic sounds. In other words, humans understand *sentence structure* — *syntax* — the *connection* between words.

The acquisition of words by themselves does not create the *human* language. A real language must select from the myriad computations that the human mind performs when interacting with its surroundings. Lenneberg concludes that "Whether the brain of a chimpanzee has the same or similar properties must yet be demonstrated. It is possible *but not probable.*" Suzanne Langer asked:

If we find no prototype of speech in the highest animals, and man will not say even the first word by instinct, then how did all his tribes acquire their various languages? Who began the art which now we all have to learn? And why is it not restricted to the cultured races, but possessed by every primitive family, from darkest Africa to the loneliness of the polar ice?

What about the "languages" of animals? Ernan McMullin, Chairman of the Department of Philosophy at Notre Dame, explains why they must be sharply distinguished from the languages of human beings:

In recent times, much has been made of the "languages" of honey-bees, ants, dolphins and other highly-organized animals. But several features of the "languages" mark them off sharply from the languages of man. First, they are species-specific, inherited not learnt. Their use is instinctive, not reflective. Honey-bees of one species will not be able to "follow" the language of another species, nor can they learn it. Genetic differences can even arise within species due to geographic separation; an Italian honey-bee cannot follow the cues given by a hive of German cousins. Once an Italian honey-bee, always an Italian honey-bee! The individual can in no way

modify or unlearn its "language" because of its being (so far as we can tell) entirely genetically determined, entirely instinctive in origin. Second, all of the signs used are *signals*, strictly speaking, that is, they elicit immediate action. There is no reason to attribute to them a propositional character. They are not being used to make statements about the sugar-source, but rather to serve as stimulus for an instinctive response on the part of other bees that will send them to the right place. Third, these languages are entirely limited to a single type of situation, one that is of biological significance to the species, food gathering, for example, or courtship.

Animal languages stagnate. Human languages adapt. McMullin stresses the difference:

Man does not inherit a language; he has no endowment of language-signs.... Thus, human languages have to be learnt.... To the child, they come extra-ordinarily easily and quickly; for the adult, it may require a great effort to acquire a new language. But just because they are not programmed into the human brain, man's languages possess a feature that more than compensates for the effort it takes to learn them. They are capable of being modified at will, to respond to new kinds of situations. There is a creative element here, an implicit demand on human creativity that is seldom recognized.

Is the spoken human language unique? Dobzhansky says yes — but then leaves us hanging as to a *reason why*:

The fascinating work of C. Hayes, who attempted to bring up a chimpanzee child by treating it as if it were a human child, is relevant here. The ape has learnt all manner of things which no other ape in the world ever did, excepting that it was unable to learn to speak. And yet its vocal capacities seemed adequate to produce all the sounds of which human language is composed.

Many social scientists are perplexed by the singular existence of the human language. S. L. Washburn, for one, cannot understand why *many* animals haven't "developed" this capacity.

But all the animals make sounds and it would seem to be so advantageous to develop a language, so it seems to me very surprising that language also has apparently only developed once.... What human language does in its simplest form is to name something in the environment. This is precisely what monkeys' sounds and gestures do not do. They mean warning of a predator, but they can't say "lion," they can't say "hyena," they can't say "leopard." This would seem to be of supreme adaptive value. This is why I think it's so surprising that this didn't happen more often because what the animals, in fact, have

to do is quite different with these different forms of predators.

Historical Communication

Historical communication has bestowed upon man the capacity to pass on to the next generation the amplified mistakes of all past generations. Animals are severely limited in communicating from one generation to the next (because they do not have a symbolic language). However, whatever they do transmit is (at least "thought" to be) beneficial to the individual offspring (as well as to the species itself).

Man is different. He has the remarkable talent for endowing succeeding generations with the lessons of history — though generally colored with irrational bigotries and prejudices.

What living creature besides man knowingly builds upon the proven error of his predecessors, and then strives to make things worse, so that as a result, he can take pleasure in passing the whole mess on to his descendants?

Culture

The development of culture is the outgrowth of language and historical communication. The changing culture of human society is dramatically different from the stagnancy of animal society.

Not even the cleverest ape can equal a human child as an acceptor of culture... This capacity is not present in any non-human form of life, certainly on earth and almost certainly in the Cosmos. It is the basis of the uniqueness of men, and also the bond between all men, no matter how much they may differ among themselves in other respects. (Theodosius Dobzhansky)

4. FAMILY AND SOCIETY

Control of Emotion

For a human society to exist, man must exercise control over his biological emotions — and cooperate with his fellows.

... if one watches free-ranging monkeys or uses Dr. Goodall's excellent data on chimpanzees, one notes that these big male chimpanzees just go into uncontrollable rages. This is characteristic of many monkeys, too. A group of apes or monkeys doesn't sit around as people sit around for any substantial period of time. Somebody would get mad at somebody and things would go wham-o. Rage is a chemical matter, a matter of the brain, etc. as well as being triggered socially; our brains are vastly more in control of the rage reactions than is

the case in the nonhuman primates. Certainly this is related to the ability to cooperate and to plan. These abilities also, of course, are uniquely human. (S. L. Washburn)

Remember, it's *not* that human beings do not go into rages. It's just that humans can control the impulse. (If they want to.)

Family Life

Animals raise their offspring according to preset patterns — every animal, in every location, in every "family," in



Watson Ambassador College

every generation, *is*, has been, and will ever be, raised exactly the same, like the similarity of bottles of Coke coming off the assembly line.

Humans have had *real* families — as old as history itself. And humans rear their children as *they themselves* determine, and every child is utterly unique.

5. SEARCH FOR MEANING

Aspiration to Higher Levels

Many human beings are never satisfied. Some people are always striving and struggling to increase their influence over their surroundings. Whether we refer to awareness, wisdom, understanding, knowledge, influence, money, possessions, power, prestige, status, looks, sexual attraction, etc., human beings continuously aspire to augment their present level of achievement. (This does not mean that every human being will do so — but every human being does have the potential and option of doing so.)

Animals, on the other hand, strive and struggle to fulfill their basic physiological needs and drives — and that's it — that's all they want. (And this *does* mean *every* animal — animals have no option and no choice.)

I do believe that *the quality of the human spirit which is always aspiring to higher levels and which, at its highest, expresses the ineluctable obligation to seek and know, to comprehend evermore perfectly, absolute values, is something which far transcends anything we have reason to believe exists in the animals. Here,*

in my view, there is a dividing line indeed. (W. H. Thorpe)

Meaning in the Universe

Man's quest extends far beyond his own miniscule environment of satisfying his bodily and mental needs. Man's mind is his vehicle — and he travels every order of magnitude from the sub-atomic distances of angstroms (one ten-millionth of a millimeter) and times of nanoseconds (a billionth of a second) to the astronomical distances of light years (estimated at six trillion miles) and the cosmological times of billions of years.

What marks man off is his reach outwards to the universe as a whole, through symbolic structures of language, myth, and science. There is no evidence whatever of anything even remotely similar to this in the case of any other terrestrial being. (McMullin)

Meaning in Human Life

"The ultimate questions which man asks about himself are partly answered by the very fact of their being asked."

This statement from the chapter

"Man" in *THE GREAT IDEAS — A Synopticon of Great Books of the Western World* says it all in one short sentence. Because the ultimate question "Is the human mind unique?" is answered "unequivocally yes" by the simple fact that the question is posed at all!

Man's search for meaning operates on a wholly different order of magnitude from the compulsive drives of animals. The questions "Is there an ultimate meaning in life?," "Where is humanity going?," "Why was I born?," "What's it all about?" have inflamed every generation of human beings from time immemorial. The desire to understand "the purpose of it all" gnaws at the innermost being of every thinking person throughout his or her life.

And there is absolutely no equivalent in all of the animal kingdom. An animal can see no more than specific bits and isolated pieces of its life at any one time. In momentous contrast, a human being can not only visualize the entire scope of his own life, but he can also comprehend the whole expanse of all human life as one unified concept.

No animal asks questions about the meaning or purpose of life, because animal life cannot be doubted, it can only be embraced and enjoyed. Man is unique, certainly on earth and probably in the Cosmos, who asks such questions. (Dobzhansky)

It does not matter for the purposes of this article what answers the individual human being gives himself in response to his own crying need to attain some meaning for his own personal life. By the simple fact that this need to know exists, man has already demonstrated the transcendent uniqueness of the human mind: its knowledge and ignorance, its awareness and loneliness, its grandeur and wretchedness. "Man knows that he is wretched. He is therefore wretched, because he is so; but he is really greater because he knows it." (Pascal)

Victor Frankl developed an entire school of psychotherapy around man's search for meaning. And he refutes the claim of those who say that man's search for meaning is just a "secondary rationalization" of the instinctual drives of animals.

Man's search for meaning is a primary force in his life and not a "secondary rationalization" of instinc-

tual drives [as it would be in animals] ... There are some authors who contend that meanings and values are "nothing but defense mechanisms, reaction formations and sublimations" [again as in animals]. But as for myself, I would not be willing to live merely for the sake of my "defense mechanisms," nor would I be ready to die merely for the sake of my "reaction formations." Man, however, is able to live and even die for the sake of his ideals and values!

6. BASIC TRAITS AND NEEDS

Malleability

In contrast to animals, who are restricted by specific geographical, physiological and psychological circumstances, human beings are almost infinitely adaptable.

It is true indeed, that man, in contrast to the animal, shows an almost infinite malleability; just as he can eat almost anything, live under practically any kind of climate and adjust himself to it, there is hardly any psychic condition which he cannot endure, and under which he cannot carry on. He can live free, and as a slave. Rich and in luxury, and under conditions of half-starvation. He can live as a warrior, and peaceably; as an exploiter and robber, and as a member of a co-operating and loving fellowship. (Erich Fromm)

Out of Harmony With Nature

All animals contribute to the balance of nature. Only man, among all the creatures on earth, *disrupts* the balance of nature. The proof? Pollution and pesticides: the crisis in ecology.

Need to Work and Trade

Man rises above the animal kingdom because he *produces*. No matter how primitive the technology, all human beings *work* — every society molds and permanently changes its environment.

What animal could be called a "craftsman" — with, to quote C. W. Mills, "no ulterior motive in work other than the product being made and the process of its creation?"

Once man completes his own work, he *trades* for the products of his fellow man's work. No animal does this. The great economist and social thinker, Adam Smith, analyzed it thus:

... the propensity to truck, barter, and exchange one thing for another ... is common to all men, and to be found in no other race of animals, which seem to know neither this nor any other species of contracts ... Nobody ever saw a dog make a fair and deliberate exchange of one bone for another with another dog.

Able to Be Bored

Human beings can become *bored*. Animals cannot. No animal could realize that "I'm bored." The difference is fundamental.

Animals are content when their basic bodily needs are satisfied. Few men are really content under similar circumstances. Human beings demand *variety* in their lives — *change* creates *interest*. Animals, on the other hand, *avoid* variety in their lives — *change* creates *anxiety*. (Animals, of course, do experience *variation* in their lives — but it's a *planned* variation within very structured boundaries.)

7. HIGHEST CAPACITIES AND CAPABILITIES

Moral Sense

Animals will do anything if it will benefit themselves. Humans, in contradistinction, can act in accord with a higher sense of what (they at least "think") is "Right" and "Good."

We are not presently concerned whether there is, or is not, an "Absolute Right" and/or an "Ultimate Good." Our point is that man "thinks" there is — and therefore tries, or pretends to try, to live in harmony with it. Animals don't try and don't pretend to try — they live by taking the path of least resistance.

Character

Character is totally unknown to animals. Only man can appreciate the concept of character — judgment and self-discipline — the capacity to make and stick to a difficult decision in the face of personal hardship.

What animal has ever envisioned, or will ever envision, the broad range of human characteristics from boorish to charming, vulgar to gracious, sneaky to upright, sadistic to compassionate, perverse to noble?

Free Will

Free will demands the absence of predetermined actions. Animals exhibit stereotyped instincts which operate by means of genetically preprogrammed pathways. Humans beings can consciously make *any* decision at any time — even irrational ones.

What animal has ever committed suicide with even a partial realization of

what it meant? Animals have been known to sacrifice their lives for their young or to run off cliffs en masse, but these events did not involve a cognizant decision to forever cease to exist.

At the other end of the freewill spectrum is the capability for *self-control* — self-control for its *own* sake, without any other related reward being considered.

Among the uniquely human phenomena are suicide and self-sacrifice. Objectively self-sacrificial behavior is certainly not very rare among animals. For example, ants are ever ready to act as "heroes" in defense of their nests. This is, however, something quite different from human behaviors to which similar names are applied: man can choose to renounce and forfeit his life for some "cause," or not to do so. An ant, a bird, or a monkey defending its progeny or its nest has no such freedom of choice. In other words, human altruism and self-sacrifice are products of human self-awareness, while similarly named (or, rather, mis-named) behaviors of animals are reactions to certain release stimuli. (Theodosius Dobzhansky)

Free will is a unique, human-level experience.

Capacity for Wisdom

Do animals have wisdom? The materialist would answer "yes" — and then offer the following experiment as his proof. "Animals can be conditioned to choose quinine (an unpleasant stimulus) instead of sugar water (a pleasant stimulus) after learning to associate the sugar water with a painful shock (an unpleasant reward) and the quinine with a sexually receptive female (a most pleasant reward)."

And that, to the materialist, is supposed to be rudimentary "wisdom." But it's actually the involuntary transference of drive-satisfying stimuli to other stimuli. Nothing more. There is no discernment of what is "Right" or "Good" or "Fair" — that capacity belongs exclusively to man.

Wisdom implicitly requires the consideration of *other people's welfare* in the decision — without any surreptitious plan or ulterior motive for "kick-back welfare" to "the self." Animals can *only* consider (what they do not even know as) "the self." They are not concerned with any other animal's welfare — except as it would produce a directly beneficial result for themselves. So — do animals have wisdom? No!

Obsession for Worship

The *worship* of a "higher reality" has characterized every human society. This worship has, more often than not, been irrational. But that's irrelevant for the present purpose. It is likewise irrelevant whether the *desire* to worship has been due to heredity or environment.

The point is that animals *don't* worship. And man does. Every known human society has been characterized by some form of worship directed toward

Higher Purposes

The word "purpose" allows for many interpretations. Animals have "purpose" in that they search for food, desire to mate, avoid bodily pain, protect their young and strive for every creature comfort. These same "purposes" in life epitomize the struggles of the human race.

But, in man, these need not be so. Animals have no choice. Human beings do.



Saritka Solomon

Man aspires to reach the stars, but will he take with him the wisdom and self-control that are needed to govern such a vast domain?

a "higher" level of existence. This does not mean that every human being in each society has "believed." As far as the individual is concerned, the choice is open. But no choice is open for animals. Animals don't worship.

Now an animal *does* exhibit a fervent respect for a group leader or will permanently follow its mother (the "imprinting phenomenon"). But in all cases, there exists a *tangible* object which draws the animal's subservience.

Man, though often *using* tangible objects, looks to a higher source of power which defies investigation by the physical senses. Whether or not this "higher reality" — this non-tangible object of worship — *really* exists is presently inconsequential. It *does* exist in the human mind — and it *does not* exist in the animal brain.

Ultimate Capacity for Love

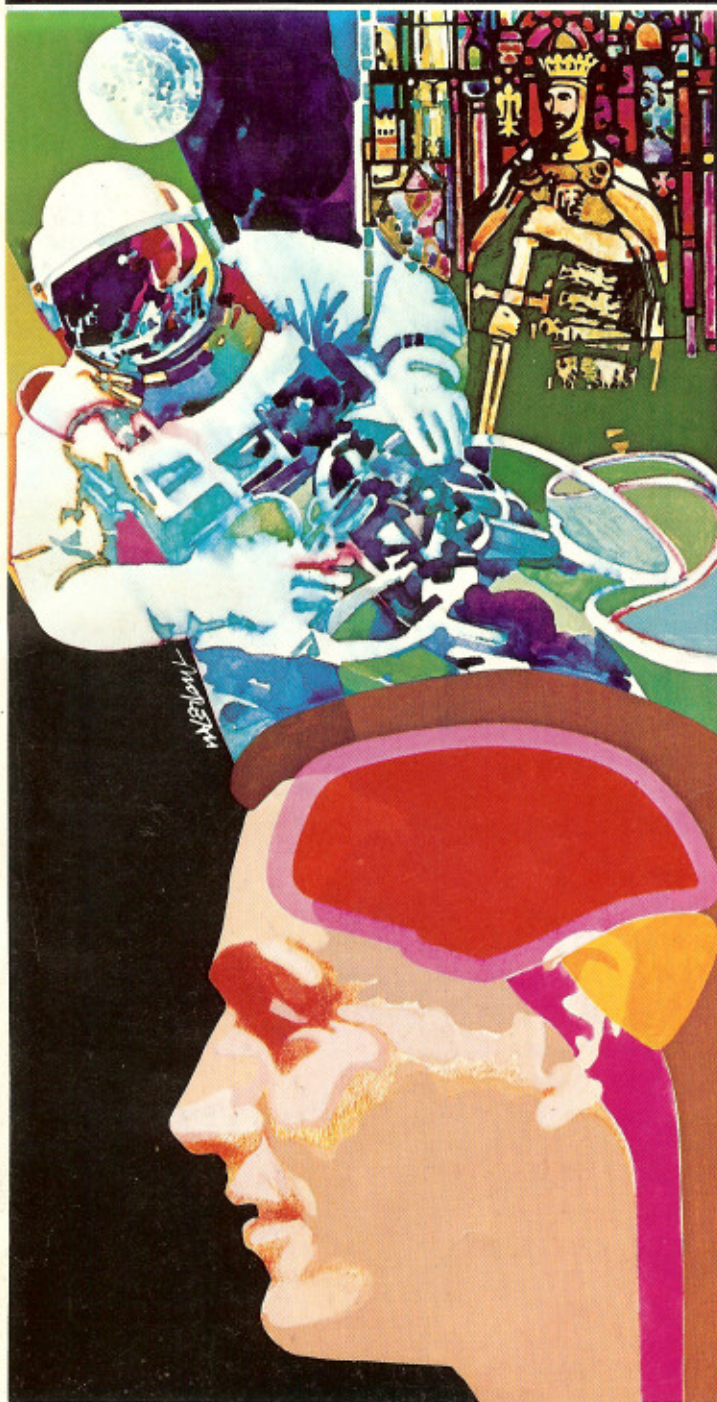
Love, properly defined, is a selfless, outgoing concern for others. Human beings have the potential — though rarely expressed — of attaining it: mercy without self-gain, compassion without guile, charity without self-righteousness.

Animals are surely attracted to "things," but this attraction is simply a self-centered craving for, and association with, their compulsive needs such as maternal instinct, sex, food, attention, etc. This is the direct *opposite* of outgoing love.

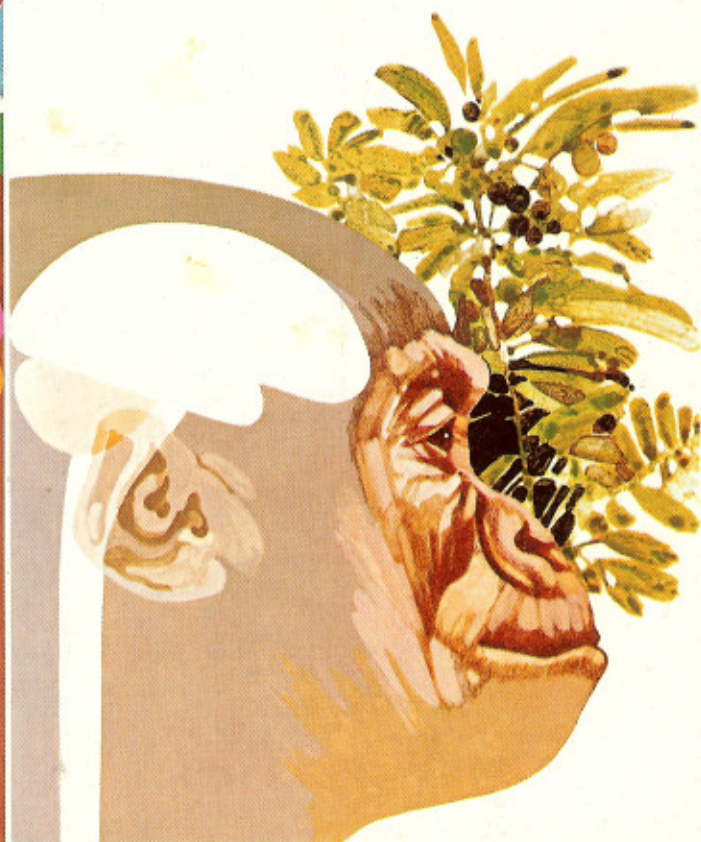
The fact that man can even comprehend the *possibility* of selfless love is remarkable in itself — and unequivocally sets us apart from the animal kingdom. □

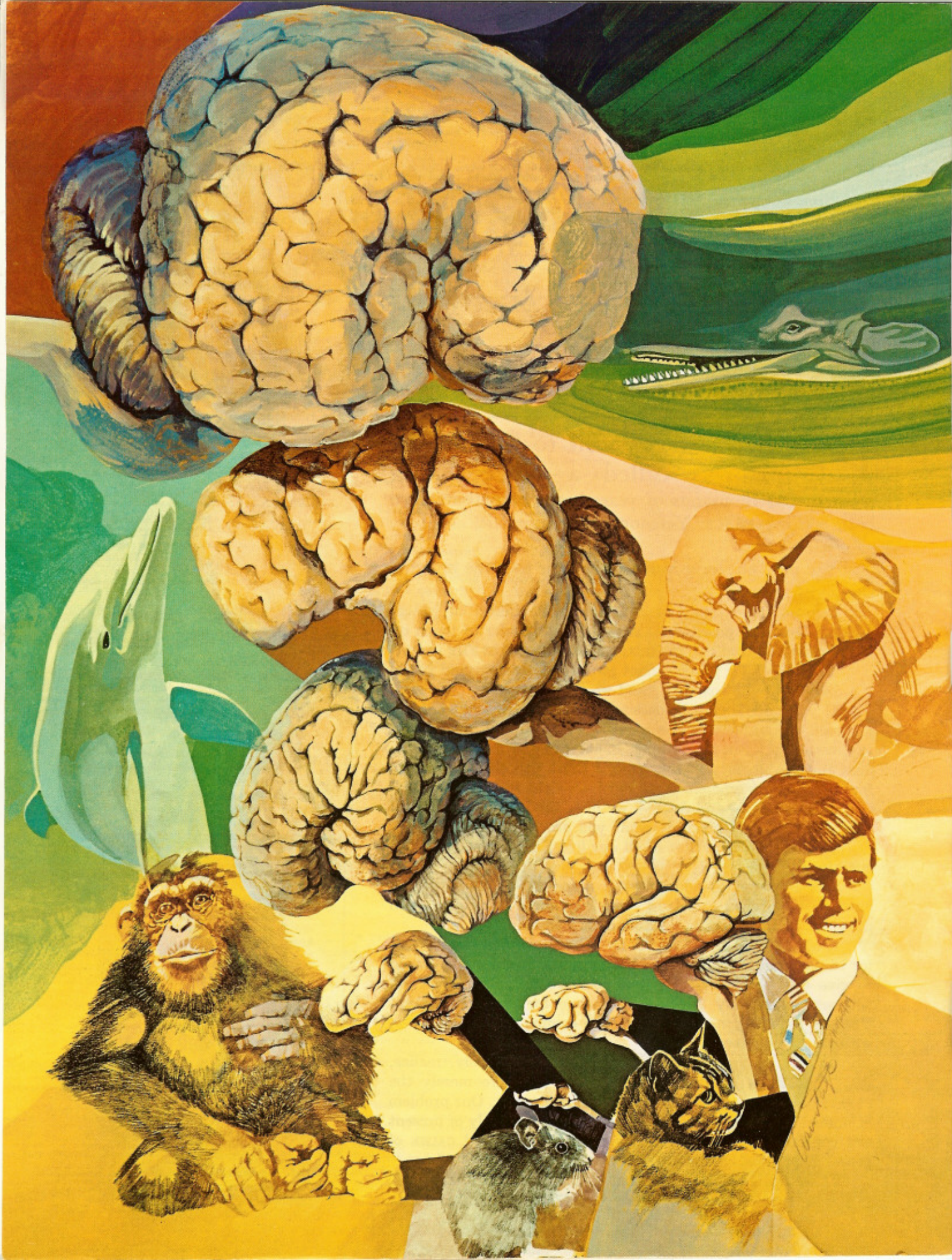
(To be continued)

the
PLAIN TRUTH
a magazine of understanding



**Can
Human Brain
Explain
Human
Mind?**





Why the vast difference between animal brain and

HUMAN MIND?

Part III

We now compare the human brain with various animal brains. Our objective is to determine IF there is "something" in the human brain that can adequately explain the human mind.

by Robert L. Kuhn

Illustrations by
Frank Armitage
with
Alain Moreau
John Solie

COMPARATIVE BRAIN SIZE —
Note the position of man's brain — smaller than whale's, elephant's and dolphin's — and the very similar external appearance.

HUMAN thought is vastly superior to animal thought.

But *why*? What *causes* the human mind to be so enormously more advanced than the output of animal brain?

To materialism, the answer is obvious: *It must be* because the human brain is equally more advanced than animal brain.

But is this so? Is materialism right? Can the difference between the human brain and animal brain wholly account for the spectacular difference between human mental activity and animal mental activity? *Is* human mental activity wholly dependent on the physical human brain?

We find out — in this third article in the series — by *comparing* the human brain with various animal brains.

Brain Research

But where do we locate unbiased brain researchers?

Not on earth — that's for sure. Therefore, we must fabricate some exotic investigators — physiologists and psychologists from the *nth* dimension (who arrive on earth through what science-fiction writers have labeled a "space-time warp").

Their mission? To analyze the

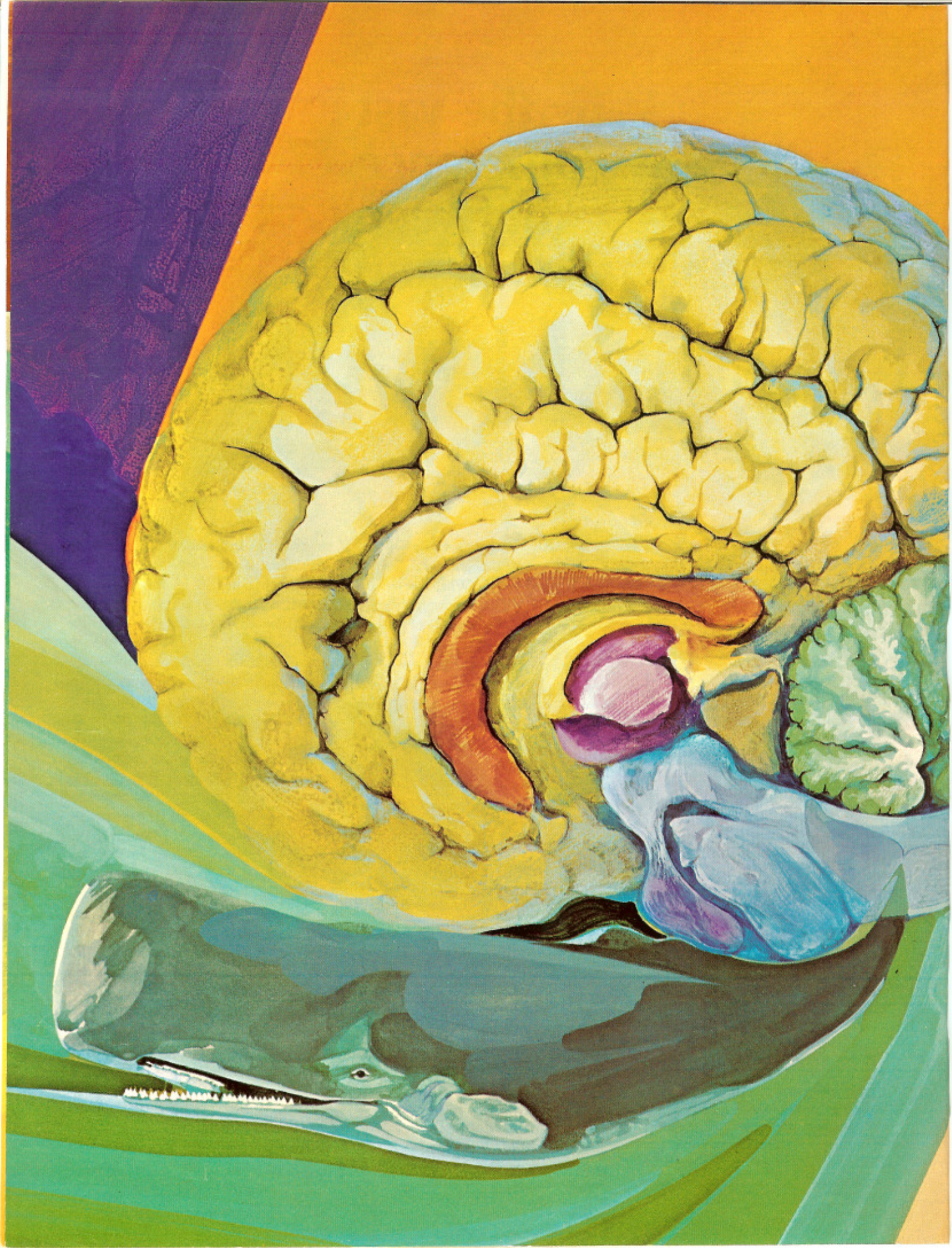
mechanisms and relative behavior of all intelligent Earth creatures.

The physiologists immediately recognized that the *brain* was the most intriguing object for study — it was the machinery of behavior. Since mammals possessed the most complex brains, the chief physiologists commandeered the investigation of mammals for themselves.

It seemed (at first) that brain weight should be proportional to intelligence. Accordingly, the brains were weighed — with a descending order of whale, elephant, dolphin, man, chimpanzee, cat, rat (seven must be a universal number). Viewed superficially, the large mammalian brains looked pretty much alike. (See opposite illustration showing the human brain in size comparison to animal brains.)

Comparative *anatomical* studies disclosed a *uniformity* of distinct brain structures (see pages 4 and 5): spinal cords, medullas, cerebellums, mid-brains, thalami, hypothalami, caudate nuclei, corpus callosi, cerebral cortices, and on and on — every component was present in every brain, though their absolute and relative sizes varied. Man's brain was *not* unique.

Comparative *microanatomical* analysis
(*Pictures on next 2 pages, article continued on page 6*)





COMPARATIVE INTERNAL BRAIN STRUCTURE

Every component is found
in every brain.

MEDULLA, PONS, MIDBRAIN

CEREBRAL HEMISPHERES

THALAMUS

CEREBELLUM

CORPUS CALLOSUM



revealed the same startling conclusion. In mammals the *neuron* is the basic component of each nervous system. Each neuron of the mammals under investigation could be divided into the same three basic sections. All mammalian neurons were seemingly identical to the human neuron in every conceivable respect.

The dendrites were of special significance. These branching matrices of neuronal antennae were of critical importance for comparing mammals. The basic rule for making such a comparison was as follows: The larger the number of dendritic branches, the greater the number of interconnections and pathways associating the billions of neurons — and consequently, as a direct result, the greater the complexity of mental options available to the particular brain.

Man's dendritic branches were the most complex — though *closely* followed by chimp and dolphin. The same relative positions among man, chimp and dolphin resulted when the multitudinous "dendritic spines" were compared.

Comparative *biochemical* studies yielded precisely the same results — all seven mammals were qualitatively identical. The critical space between neurons — the synapse — was traversed by the same basic chemical messenger. The nerve impulse was always generated by the same flow of sodium, potassium and chloride ions. Hallucinogenic drugs worked by the same mechanism — inhibiting, short-circuiting, etc. — on all mammalian nerve fibers. The immensely complicated hormonal systems were always controlled by the pituitary gland, which was controlled by the brain. Biochemically, all creatures were *identical*.

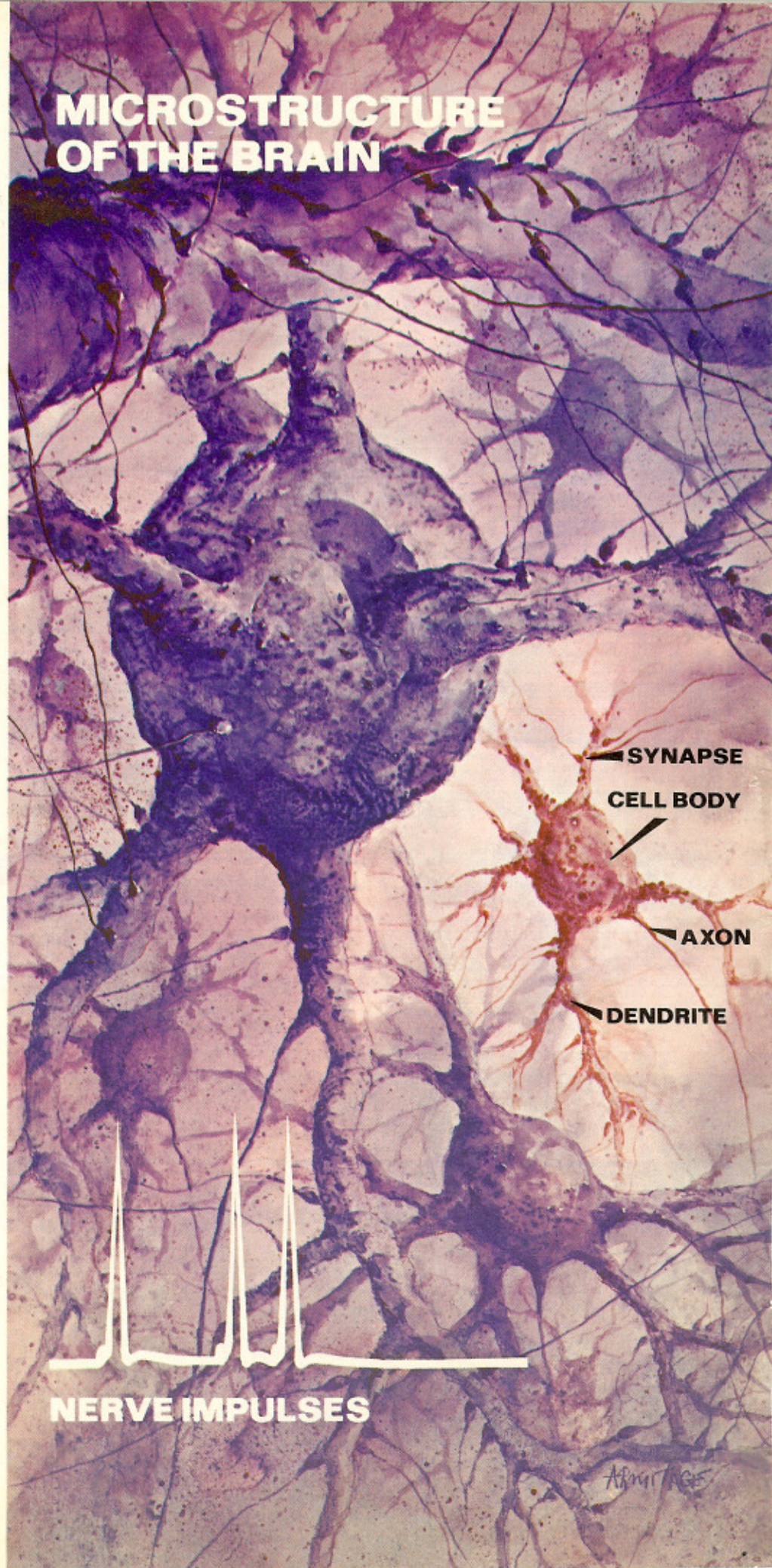
A Complication

At this point in the investigation a preliminary report was received from an *nth* dimensional physiologist spy planted in the psychology department.

Apparently, the creature "man" was manifesting surprising mental capabilities. But man didn't have the largest brain! Neither did he have any unique anatomical structure nor any strange

(Continued on page 36)

MICROSTRUCTURE OF THE BRAIN



ARMSTRONG

Why the vast difference between animal brain and HUMAN MIND?

(Continued from page 6)

biochemical actions — every characteristic of the human brain was easily found in all other mammalian brains.

Returning to their labs, the physiologists soon realized their oversight: the brain worked by continuous *electrochemical* activity. Electro-physiological studies were required.

Information in all brains was found to be simply the presence or absence of a weak (one-tenth volt) electrochemical discharge — a brief (one-thousandth-of-a-second) spark of electricity — at multiple trillions of locations. This was the *nerve impulse*.

Comparative *physiological* studies disclosed a profound *identity* of neurological mechanisms among all creatures. All information in every nervous system was found to be transmitted by the same sequences and trains of nerve impulses. Sensory receptors worked by the same process in all mammals, transducing visual (sight), auditory (sound), somesthetic (touch), olfactory (smell), gustatory (taste) and proprioceptive (position) stimuli into neuronal information.

Spinal reflexes (e.g., knee-jerk) worked by the same processes in all the creatures under investigation. Sensory and motor relay stations enabled the same kind of progressively more complex integration. Autonomic-metabolic areas, controlling heart rate, blood pressure, breathing, digestion, etc., were located in the same place and worked the same way in all living beings examined. The attention-directing mechanism — the reticular activating system, which also controlled sleep and wakefulness — was likewise present in all brain stems. Emotion and drive-controlling centers were always within the hypothalamus. Coordination of muscles (as

for walking) was always a cerebellar function. The thalamus was always a sensory-motor relay station. Sensory awareness always reached its highest level in specific areas of the cerebral cortex. The corpus callosum transferred information back and forth between the cerebral hemispheres. Again, in *all* creatures — including man.

To the *nth* dimensional physiologists, the human brain worked like any animal brain. When any sensation (stimulus) occurred in any animal, a large electrical signal was evoked at specific locations in the brain. This electrical "waveform" was recorded by locally implanted electrodes and then displayed on an oscilloscope.

Now the critical question: Was *human* electrical activity markedly superior to *animal* electrical activity?

No! It was astonishing — *no!* The same stimulus (e.g., a pin prick on the toe) triggered *similar* waveforms in analogous brain locations of *all* creatures.

Furthermore, the electrical brain patterns (EEG waves) seen in the human brain during alert and relaxed mental states were practically indistinguishable from the similar EEG waves in animal brains during similar mental states (see illustration on the opposite page).

The surprising evidence of the spy report was now incorporated; all the data were neatly fit together; the jigsaw puzzle was complete — and the physiologists confidently compiled their conclusions.

1) Human brain was the most advanced.

2) Chimp brain and dolphin-whale brain were both a very *close second*.

The Confrontation

The physiologists smugly predicted that the psychologists would find man to be only slightly pre-eminent on earth in both individual and collective behavior — but chimp and dolphin would both be a *very close second*. The rest of the mammals would then follow.

Savoring the expected satisfaction of crushing the psychology profession once and for all, the physiologists received the official report of the psychologists' conclusions (published simultaneously with their own to avoid additional

antagonisms).

They were visibly shaken by what they read. It seemed impossible.

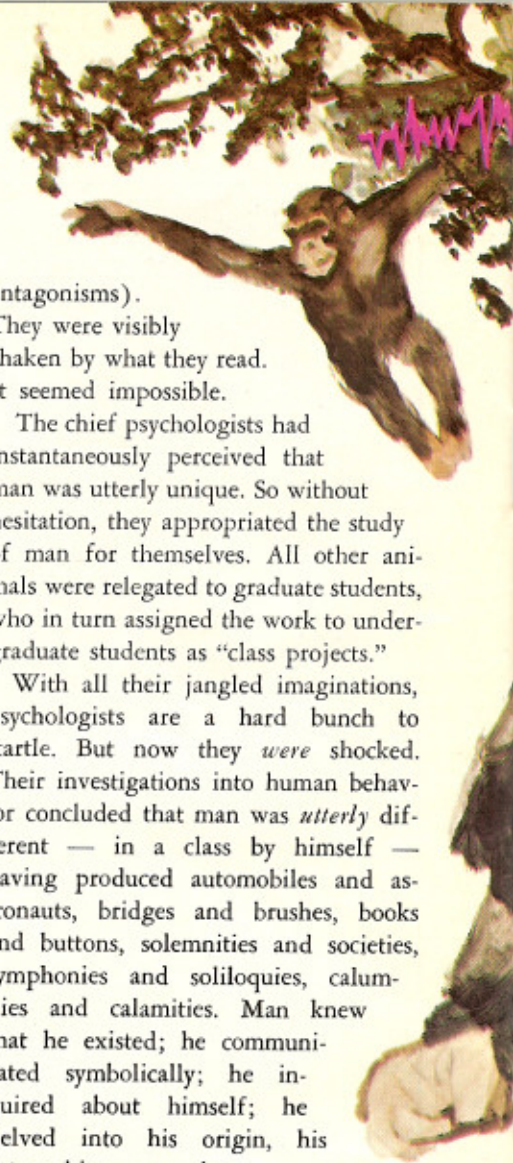
The chief psychologists had instantaneously perceived that man was utterly unique. So without hesitation, they appropriated the study of man for themselves. All other animals were relegated to graduate students, who in turn assigned the work to undergraduate students as "class projects."

With all their jangled imaginations, psychologists are a hard bunch to startle. But now they *were* shocked. Their investigations into human behavior concluded that man was *utterly* different — in a class by himself — having produced automobiles and astronauts, bridges and brushes, books and buttons, solemnities and societies, symphonies and soliloquies, calumnies and calamities. Man knew that he existed; he communicated symbolically; he inquired about himself; he delved into his origin, his future, his purpose; he was aware of beauty and order; he wrote his history. *None* of these characteristics were even *rumored* to exist in chimp, dolphin, elephant or any other animal.

Flushed with pride, the *nth* dimensional psychologists had then launched themselves into the realm of physiology. They speculated that the portion of the body which sat upon the neck encased the vital mechanisms underlying behavior.

But it was obvious that the components of the human head would have to *vastly* excel the components of the animal head in order to account for the human mind. At the very least, a unique anatomical structure or novel functional principle must exist in man.

And so it was a humble group of psychologists and physiologists who met in their first joint symposium. The antagonisms were gone, for both had been humiliated. A reconciliation had occurred, for both shared a common despair.

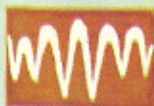




SIMILAR BRAIN WAVES

for Man and Chimp

RELAXED



ALERT



The physiologists stood stupefied, numbed by man's astounding mind. The psychologists sat numbed, stupefied by man's ordinary brain.

The physiologists couldn't explain the cavernous gulf between human mind and animal instinct — the brains were not *that* different, anatomically, biochemically or electrically.

The psychologists couldn't comprehend the precise uniformity between human brain and animal brain — the resultant mental productions were *so* radically different in every area of comparison.

There was no physical explanation.
(See next two pages.)

All the scientists were frightened. There was only one solution to the problem — and nobody liked it.

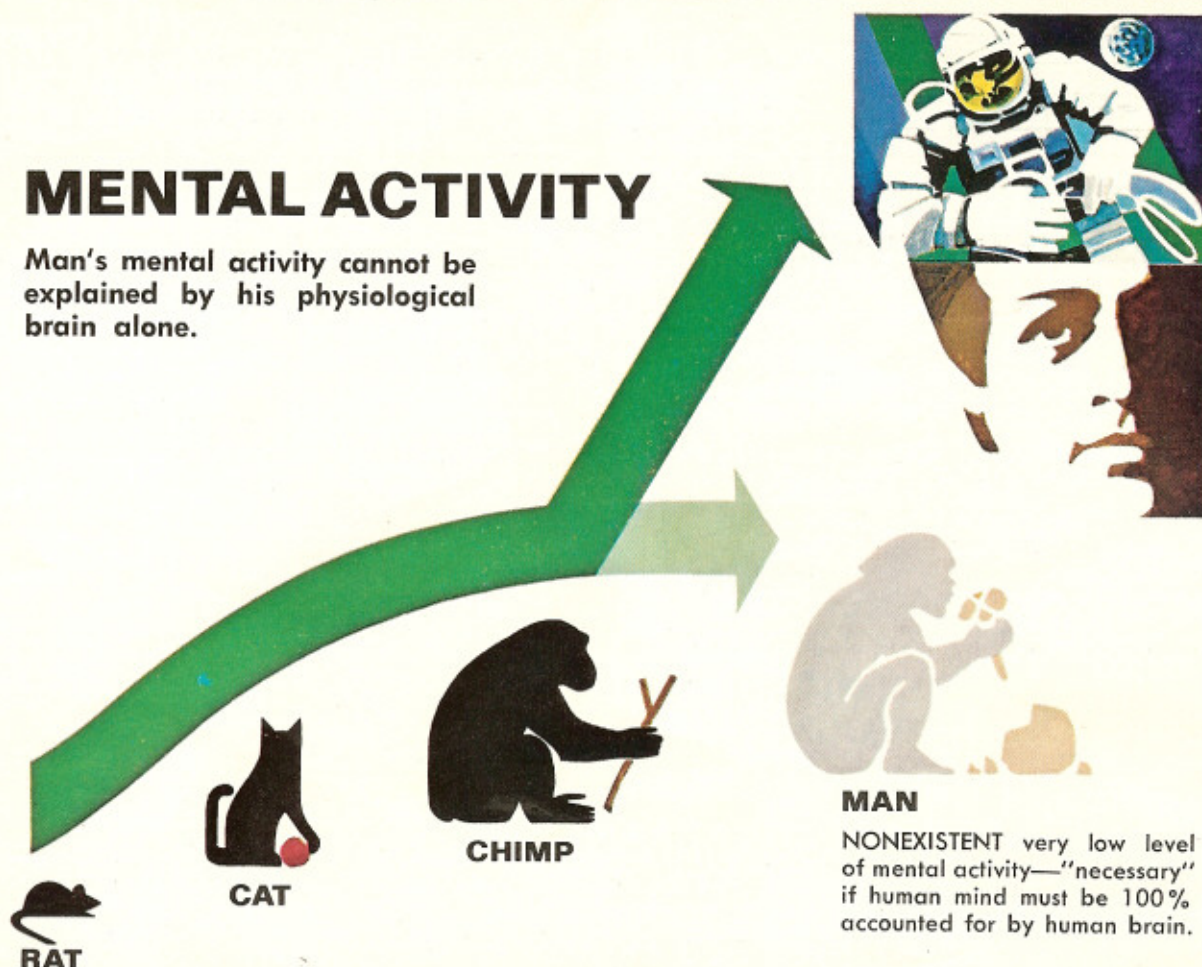
What was it?

(To be continued 'next issue')

Jim Salie

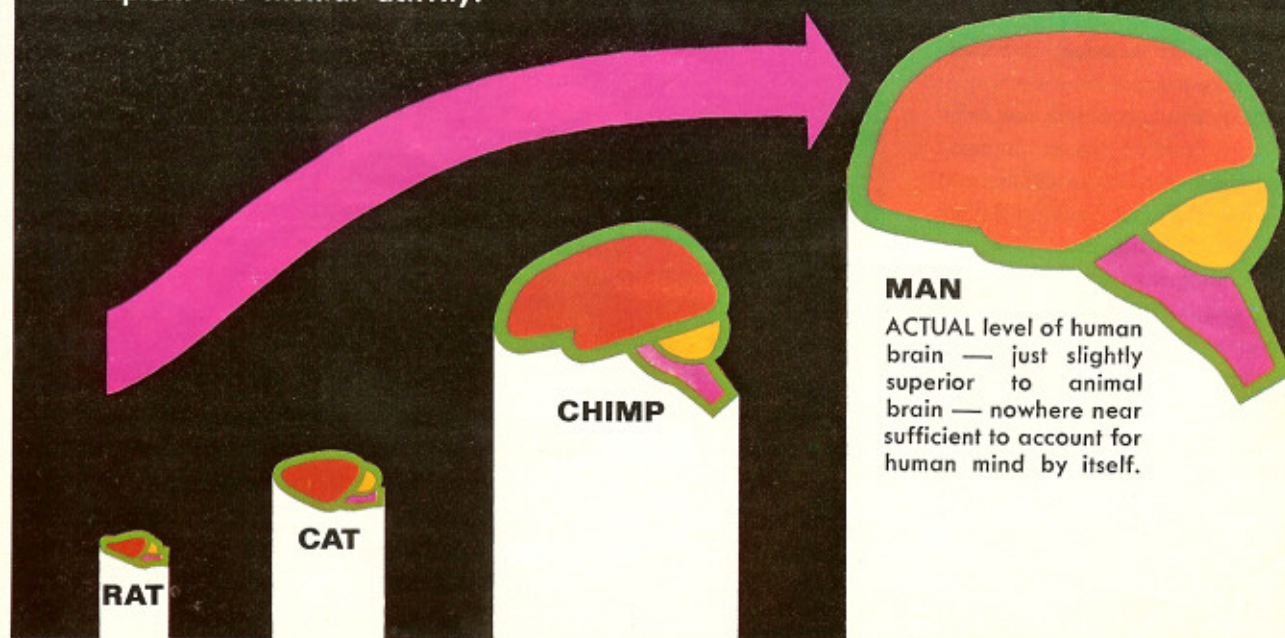
MENTAL ACTIVITY

Man's mental activity cannot be explained by his physiological brain alone.



PHYSIOLOGICAL BRAIN

Man's physiological brain alone cannot explain his mental activity.



HUMAN MIND AND ANIMAL BRAIN

A Graphic Illustration

FOUR physical beings — rat, cat, chimp, and man — are compared with respect to (1) Physiological Brain and (2) Mental Activity. (These graphs are only illustrative of the general principle and are obviously not intended to be absolute or quantitative.)

In the bottom graph, a gradual increase in complexity of physiological brain is exhibited from rat-to-cat-to-chimp-to-man. In the top graph, a gradual increase in complexity of mental activity is manifested from rat-to-cat-to-chimp. But that's where the similarity ends. The chimp-to-man step is accompanied by a spectacular jump in mental activity.

Let's view these two graphs through the eyes of the materialist. Remember, he has an assumptive axiom to grind: He must maintain that all human mental activity is solely and exclusively generated by the human physiological brain. And for this to be true, man's position on the mental activity graph would have to be completely dependent upon, and be totally explained by, man's position on the physiological brain graph. Or, in other words, the solid arrow in the mental activity graph would have to correlate *consistently* with the similar arrow in the physiological brain graph.

But, much to the dismay of the materialist, when he attempts to harmonize these graphs with his theories, he generates a contradiction.

Man is *way* out of line. The arrows don't match—they're not even

close. Something is obviously wrong. The materialist's *logic* is good. It's his *axiom* that's off. The full blame for the inconsistency—this mismatch of arrows—must be squarely placed on materialism's cardinal principle: human brain equals human mind.

The point is fundamental. The two graphs correlate perfectly for rat, cat, and chimp: a progressive increment in complexity of physiological brain is reflected by an analogous increment in mental activity. This means that *for animals materialism is wholly true*: Animal brain accounts for all of animal mental activity. Now, if this *same* correlation between physiological brain and mental activity would also hold true for man, then materialism would be correct, and human thought would have precisely the same dependence on the human brain as animal thought has on animal brain.

But here's the point: What *does* happen when the leap is made from chimp to man? A dramatic *break* in continuity occurs in the mental activity graph. And only a simple increase occurs in the physiological brain graph.

The critical correlation is destroyed! And that's the point! Who is responsible? Not the animals. Only man!

We can come to but one conclusion: Man must be different. The equation, "brain equals 100% of mental activity," valid for animals, is not valid for man.

Finally, we present the problem in

reverse. What would it take to validate materialism? The only way would be if the physiological brain graph *consistently correlated* with the mental activity graph with respect to man. This correlation could be either linear or non-linear — so long as the same correlation between mental activity and physiological brain which exists for every animal would equally exist for man.

How would materialism's premise — human mind equals human brain — be verified? Nothing less than either of the following two conditions would be required:

(1) Man's physiological brain would have to be *enormously* more complex than chimp's, suddenly jumping far beyond the progressive brain development shown from rat-to-cat-to-chimp.

(2) Man's mental activity would have to be only *slightly* above chimp's, just the mere extension of the gradual increment in mental activity displayed from rat-to-cat-to-chimp. (This is indicated by the light green extension of the arrow in the top graph. Note that the figure shown is a *completely hypothetical being* — a nonexistent creation that could only be barely superior to ape in mental activity.)

But both of these would-be "saviors" of materialism's cornerstone — human mind equals human brain — are hopelessly nonexistent. To the open-minded individual, it is fruitless to rationalize the uniqueness of the human mind as merely physical.

Why the vast difference between animal brain and

HUMAN MIND?

PART IV

by Robert L. Kuhn

Illustrations by Frank Armitage
and Alain Moreau

IN OUR January and February issues, we analyzed the similarities and differences between the *mental activities* of humans and animals. We demonstrated that human thought is *enormously* superior to animal thought.

In the March-April issue and now in May, we analyze the similarities and differences between the *physiological brains* of humans and animals. We are demonstrating that the human brain is only *barely* superior to animal brain.

Finally, in June, we will correlate the two — as we explain the enormous superiority of human mental activity in the light of the bare superiority of human physiological brain — and begin to answer the ultimate question: What is man?

OUR imaginary scientific friends haven't moved since we left them last month. They're too stunned — and frightened. The physiologists stood stupefied, numbed by man's astounding mind. The psychologists sat

numbed, stupefied by man's ordinary brain.

There seemed to be only one way of solving their dilemma.

The human *mind* greatly surpassed what could not even be called "animal mind." But the human *brain* was only barely superior to animal brain. How, then, could the incredible human mind be explained if not by the physical human brain?

Was there any choice?

A *NON-physical component* seemed to exist in the human mind. How could these imaginary researchers (from the "n-dimension," remember?) maintain even a shred of their much-professed intellectual honesty and *not* admit that the human mind contained a *NON-physical component*?

With this installment we thanked them for their help and bade them adieu.

Now let's consider the cosmological import of their conclusions. Imagine the consequences *if man indeed* possesses a non-physical factor: our individual lives — indeed our whole society — would have to be restructured. And time is running out. So,

considering the awesome significance of such an intimate non-physical reality, we should be absolutely sure of its existence.

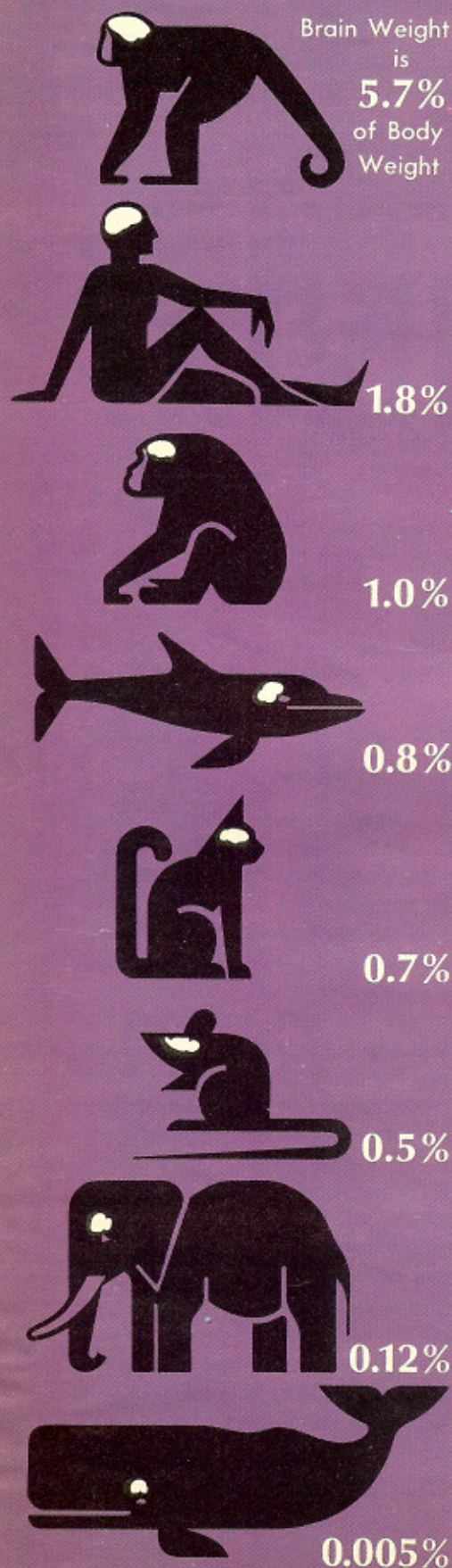
HOLD IT!

You may not have guessed it. But there are three general types of people reading this series on the human mind. The first group has always been convinced that the human mind is simply the product of the human brain — with absolutely *nothing* non-physical involved. For them no proof would ever really be acceptable. The second group has always assumed that a non-physical component *does* exist in the human mind. For them no proof was ever really necessary.

It is to the third group that this present article is addressed. These are people at all levels of society and education who are not bound by either dogmatic view. These are people who think — people who demand factual data, logical reasoning and the truth.

And we challenge this third group to *determine* the truth: Is there, or is there not, a non-physical factor in the human mind? Consider the evidence,

COMPARATIVE WEIGHTS— BRAIN AND BODY



analyze the arguments — and *then* decide.

Brain Size

At least to some degree, mental capacity is proportional to brain size. Brain weight and intelligence increase from rat to rabbit to cat to chimp to human. But there are mammalian brains *much larger* than the human brain — like the brains of whales, dolphins, and elephants. What about these mammoth, well-structured brains? They require thorough investigation.

Now it would betray incredible ignorance to immediately conclude that, since man's brain is smaller than a whale's brain and since human mental activity is much more profound than whale mental activity, man must have a non-physical factor. We must investigate in detail.

Whales especially stand out when mammalian brains are compared by gross weight. A sperm whale brain can weigh 19.6 pounds — that's more than six times the three-pound human brain and 20,000 times more than the 0.0009-pound mouse brain.

Clearly, mere weight of brain can tell us little about an animal's mental capacities, for otherwise an elephant would be more than three times as intelligent as man and a Rorqual [fin whale] would have an unheard of I.Q. (E. J. Slijper, *Whales*)

Many elaborate formulas have been devised to portray the relevance — or more precisely the *irrelevance* — of gross brain size. Naturally, the huge brains of whale and dolphin cause some anxiety to the materialist. Nonetheless, he has his apparent explanation.

The traditional (and most simple-minded) interpretation of the brain weight-intelligence relationship is this: brain weight itself is not as important as the brain weight's *percentage* of total body weight. On this scale, man surely ranks highest — or so we are led to believe — his brain being 1.8% of his 165-pound body weight. Chimp brain is about 1.0%, sperm whale brain 0.03%, and blue whale brain

0.005% of its 300,000-pound hulk.

Though this theory seems logical — and is indeed partly correct — it rapidly breaks down. Among cetaceans (whales, dolphins, porpoises) — whose mental capacities are almost indistinguishable from one another — the brain weight percentage varies almost 200 times from 0.86% (porpoise) to 0.005% (blue whale). This variation is about 100 times greater than the difference between man and porpoise. Are porpoises 200 times "smarter" than blue whales? And are men only twice as "smart" as porpoises?

Without wasting any more time, the capuchin monkey of South America blows the theory apart. Its brain weighs 5.7% of its total body weight — over 200% more than the human brain-weight/body-weight ratio. Does that mean this little monkey is 200% more intelligent than human beings?

Other systems such as the ratio of total brain weight to body surface area or brain-stem or frontal-lobe weight may seem more valid at first — but soon turn out to be just as ineffective in explaining the superiority of the human mind.

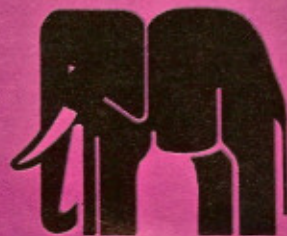
Let's get more specific. The *entire* brain isn't responsible for conscious-



IIB



IIA



III



BRAIN CLASSIFICATION

The brain classification system of Kathrina Wirz, which emphasizes three classes (I, II A & II B, III) of cephalic complexity, explodes the older systems which relate brain weight to body weight. Note that the human brain merely shares the same category (III) with the very similar brains of porpoises, dolphins and elephants.

ness, personality, and intelligence. It is primarily the *cerebral cortex*.

Cerebral Cortex

The cerebral cortex is the thin — average 1/6 inch — outermost layer of the brain. It contains the cell bodies of billions of nerve cells. Whenever you view an exposed brain, everything you actually see is this thin cerebral cortex. It is convoluted (folded and furrowed) in order to compact a large surface area into a small volume.

Scientists have differentiated two general categories of cortex: One is the "*specific sensory projection cortex*," which receives, processes, and analyzes the *direct* sensory information (visual, auditory, tactile) coming from the outside world. The other is the "*intrinsic cortex*" (sometimes called "unspecific" or "association" cortex), which has *no* direct communication with the external environment.

Intrinsic cortex can be split into two distinct regions: "*posterior intrinsic cortex*," which is involved in sensory associations and problem-solving, and "*frontal intrinsic cortex*," from which thinking in the sphere of time, social awareness, and the "will" originate. Intrinsic cortex, then, is the seat of the highest mental activities. It is a key area for human thought.

Man has a large cerebral cortex, extensive intrinsic areas, and a massive frontal region. Consequently, it is logical that man is somewhat more mentally advanced than mere brain size suggests.

In fact, it is the *relative* proportion of intrinsic cortex which is critical. *Too much specific* cortex "clutters up" the brain — much as numerous local radio stations will limit the range of a superpower station — thereby not allowing the intrinsic cortical areas the "unjammed freedom" necessary for the generation of cognitive, symbolic, and abstract thought.

So it is the *ratio* (percentage) of intrinsic cortex to total cortex (as well as the total *amount* of intrinsic cortex) which is crucial. This percentage is roughly 10% in rat, 50% in cat, 75% in monkey, and 95% in man. Recent data indicates that the percentages of intrinsic cortex in whale and dolphin are roughly the same as in monkey. This means that whale and dolphin have a *greater amount* of intrinsic cortex than man, with very close to the same ratio. How then could man's small advantage in ratio more than offset his considerable disadvantage in amount?

Professor Slijper reports that cetacean (whale, dolphin, porpoise) brain,

aside from its size, is remarkably similar to the human brain. He emphasizes that cetacean cerebral cortex is exceptionally convoluted (just like the human brain) and extends so far back that in the common dolphin it completely covers the cerebellum at the rear of the cranial cavity (again, *just* like the human brain). Slijper contends "these convolutions are not only very striking in appearance, but are an essential criterion for judging the stage of development a given brain has reached." He sums up his impressions by facetiously asking: "Must we assume that porpoises, Sperm Whales and dolphins, by virtue of their highly developed brains have the capacity akin to those of man . . . ?" Brain capacity — *yes*.¹ Mental capacity — *no*. And that's the point.

Cetacean Cerebral Cortex

Perhaps the most knowledgeable assessment of the cetacean brain comes from Lawrence Kruger's chapter in *Whales, Dolphins and Porpoises* (edited by Norris). Kruger immaedi-

¹ Some enterprising young scholar will probably quote Tower's 1954 paper in an attempt to prove that, although the cetacean brain is larger than the human brain, its *density* of cerebro-cortical neurons is significantly less. And therefore the extremely inferior mental output of cetaceans as compared to humans is *physically* explained.

But look at the facts. As a general rule, as the cerebral cortex increases in size in different animals, the neuronal

ately stresses the "remarkable extent of fissuration (convolutions) of the cetacean cortex." He corrects older reports which described an extremely thin cetacean cerebral cortex.

Debunking this theory, Kruger shows that the crucial top layer of the cerebral cortex — the molecular layer — is extraordinarily thick in cetaceans (350-500 microns), more than double that of comparable animals and in the same range as man.²

It is classically thought that the primary criterion of intelligence is the amount and ratio of intrinsic cerebral cortex. Therefore, some scientists expected cetacean brains to have a *small ratio* of intrinsic cortex — and this would have explained man's enormous psychological dominance. Sorry. Kruger proves that the dolphin's ratio parallels that of the higher primates.

Now since the *size* of cetacean

density (number of nerve cells in a specific volume) *decreases* in proportion. At the same time, both the size of the individual neurons and the length and number of their dendrites *increase* in proportion. These facts more than compensate for the declining neuronal density of cetaceans, since both larger neurons and more abundant dendrites generate a larger electrically receptive area. This enables *each* neuron to receive and integrate information from many more neurons, and consequently greater mental potential is gained from *every one* of the billions of neurons.

Tower found that every characteristic of the huge whale brain followed these same rules: (1) Its cerebro-cortical size was bigger than man's. (2) Its neuronal density was less (7,000 per cc. of cortex). (3) Its individual neurons were larger in area than man's. (4) Its neurons had longer dendrites and more of them — the main ("apical") dendrite being of extraordinary length!

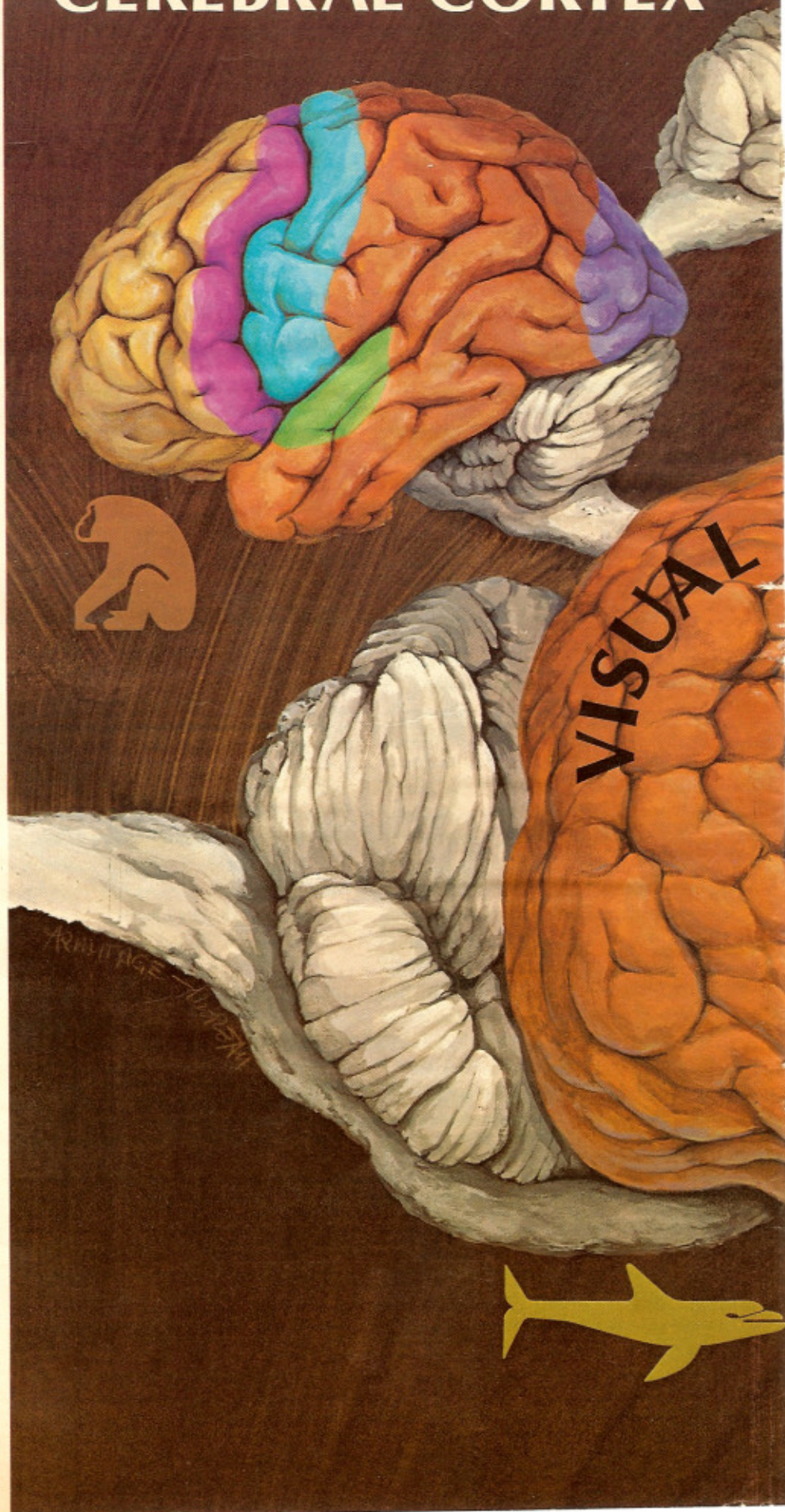
Consequently, on the basis of cerebro-cortical microanatomy, whale "must be" mentally superior to man to the same degree that man is mentally superior to chimp!

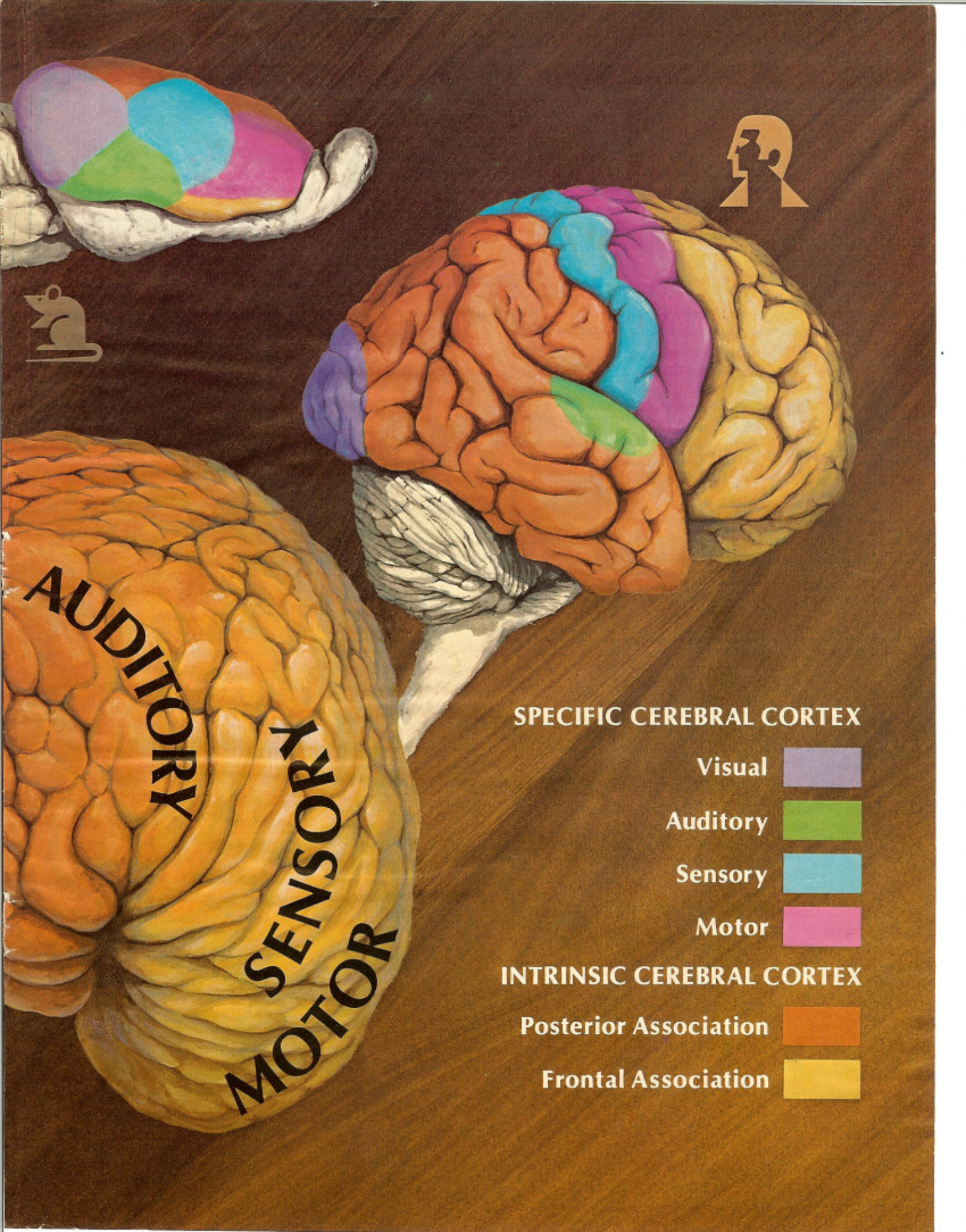
Let's be sure we understand this fundamental conclusion. The following characteristics are all associated with increasing mental capacity from mouse to rat to rabbit to dog to monkey to chimp to human: increasing brain weight, increasing ratio of brain weight to brain-stem weight, increasing volume of cerebral cortex, decreasing density of cerebro-cortical neurons, increasing size of these neurons and increasing length of cerebro-cortical dendrites.

Here is the point: All six properties continue to progress unabated from man to whale in much the same proportions as they had progressed from chimp to man. As a result, whale "must be" more intelligent than man to the same degree that man is more intelligent than chimp! Unless...

²The molecular layer — consisting largely of dendrites — is a key to intelligence. It not only enables massive intercommunications between neurons but also generates extra-cellular electrical fields [EEG waves] which may be intimately involved in the mechanisms of thought. Still another reason why cetaceans *should be* man's mental equals if no non-physical component exists in man's mind.

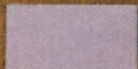
CEREBRAL CORTEX





AUDITORY
SENSORY
MOTOR

SPECIFIC CEREBRAL CORTEX

- Visual 
- Auditory 
- Sensory 
- Motor 

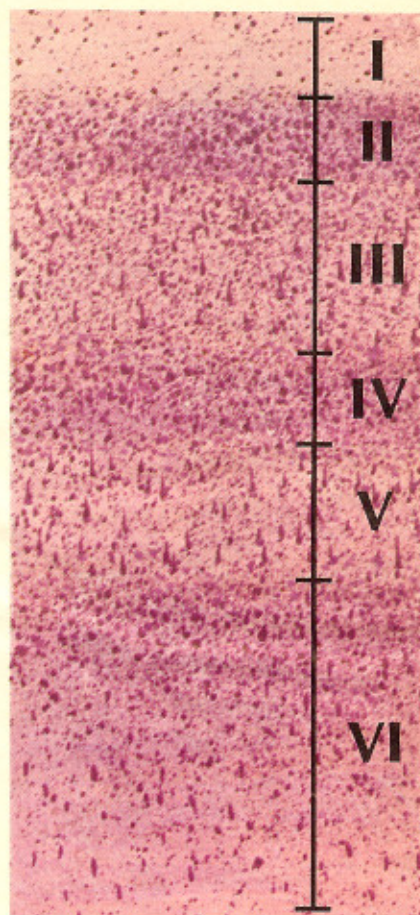
INTRINSIC CEREBRAL CORTEX

- Posterior Association 
- Frontal Association 

INTERNAL STRUCTURE OF CEREBRAL CORTEX



The cerebral cortex is the seat of all higher mental activity. Shown to the right are cross-sections of the human (1/6 inch thick), chimp, rat and dolphin cortex. Notice six distinct cellular layers in the human and chimp — and the lack of such distinct layers in the rat and dolphin. Could this help explain intelligence?



intrinsic cortex is larger than the homologous human cortex, and its *ratio* is very close to man's, what then, gives the human brain any superiority at all?

Kruger proposes the answer. But his cogent reasoning is even more interesting. To understand either, we must first learn about the microscopic appearance of cerebral cortex. The cell bodies of the billions of neurons seem to be horizontally arranged in various layers — called "laminars."³

As mammals increase in mental complexity from rabbit to cat to chimp to man, there is a general tendency for these laminars to become more stratified and more distinct. Now what

about the cetaceans? Well, brain research has finally uncovered the long-sought "good criterion for insisting upon man's superiority." Because in cetaceans this laminar arrangement is largely *absent*. Notice how Kruger phrases his conclusion:

If we were forced to choose the criteria of greatest relevance to intellectual development, the mere fact that three mammalian orders (Cetacean, Primates and Proboscidea [elephants]) presumably develop extensive "association" cortex would seem to suggest that the degree of laminar differentiation is the most evident characteristic that can be claimed for superiority in the human brain, unless one wishes to claim that dolphins and elephants are as clever as man.

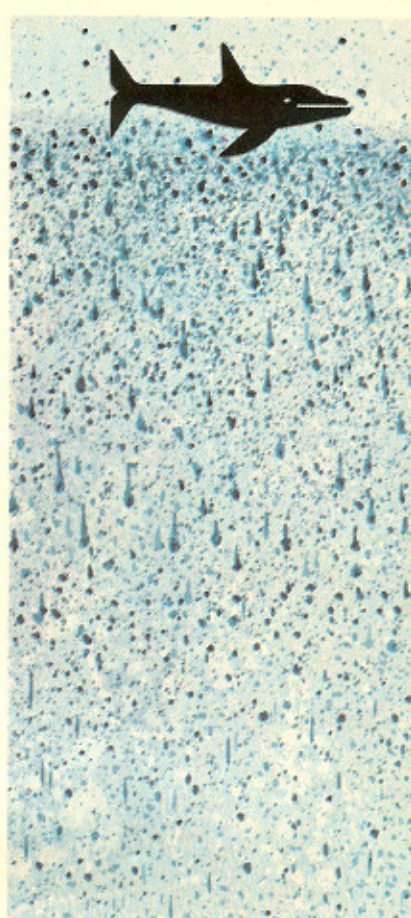
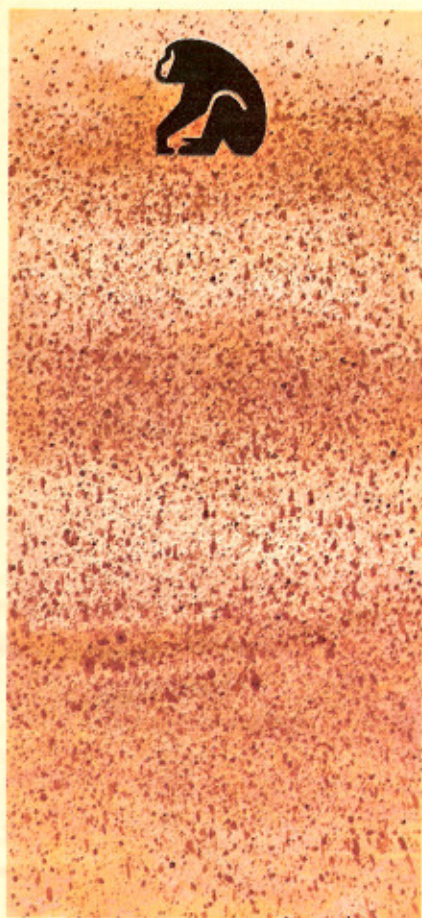
Why, asks Kruger, are human beings mentally superior to whales, dolphins, and elephants when the brains of the latter are enormously larger in size and almost equal with respect to all the traditional standards?

Kruger has *no* alternative — he

has only one viable point in which human brain is supreme: *laminar differentiation* — human cortical cells are arranged neatly in layers.

Circular reasoning has dictated this judgment — and Kruger tells us so! His logical appraisal is as sound as it is forthright and honest. He *knew* that man's brain *must* be the most advanced — yet he saw every traditional neurological yardstick deny it. Though other authors would cling to these ill-advised criteria — which supposedly proved human brain superior to cetacean brain when in fact they suggested quite the reverse — Kruger candidly eliminated them. As a result, he had to nominate the only conceivable way in which human brain could *possibly* be supreme: the arrangement of human cortical cell bodies in layers and the absence of such laminar stratification in cetacean cerebral cortex.

³ Each laminar, seen in microscopic cross section as a "layer," is actually a "layered sheet" — each one running parallel to the cortical surface at its own specified depth. The accepted system classifies six such layers. However, in man, there has been disagreement as to how many layers, sublayers, etc., there are in any given cortical locus.



Why should laminar differentiation make such a spectacular difference in the mental output of rather similar brains? It doesn't matter. Experimental evidence or theoretical justification never had to be considered.⁴ There was *no* other choice! In contradistinction to all too many scientists, Kruger makes the reader aware of his solid reasoning procedures — and we appreciate that.

Cetacean versus Human

In conclusion now, what have we learned from cetacean brain? Slijper states that the whale brain almost equals the human brain. Neurophysiologists have notoriously strained to ascertain why these huge, highly complex cetacean brains are not actually

superior to human brains. And Kruger must utilize circular reasoning to prove that the human brain is even slightly more advanced, employing a "last-resort" laminar analysis of cerebral cortex to do so — after negating all the other so-called "proofs."

Obviously, the human brain *is* physically superior to any cetacean brain. We've never doubted that fact. Kruger's right. He makes his point.

But this is our point:

If Kruger had to brilliantly struggle to keep the human brain just barely superior to cetacean brain, how then can anybody explain by physical means alone the yawning chasm between the unrestrained mental activities of human beings and the stereotyped instincts of porpoises, dolphins, and whales?

It is physically impossible.

A non-physical factor is demanded.

(To Be Continued)

ON THE following two pages, we compare man to chimp and chimp to rat. Why are humans so mentally superior to chimps, while chimps are only barely superior to rats? Again we ask: Can the reason be just physical?

⁴Of course, there *are* good reasons. Order contains more information than disorder. Furthermore, the interaction among cortical neurons — especially what is called "lateral inhibitions" — is made easier by the neurons situated next to each other in rows or laminae.

MAN, CHIMP AND RAT

Leaving our huge-brained assistants to once again roam the seas in peace, we return our inquiry to dry land. We now restrict our investigation to the *relative* positions among the *brains* of man, chimp, and rat as compared to the *relative positions* among the *mental activities* of man, chimp, rat.

1. The traditional (and generally valid) method of determining the *relative* state of brain sophistication is by comparing percentages of intrinsic cortex to total cortex. This percentage is roughly 90% in humans, 80% in chimp, and 10% in rat. This means that the rat-to-chimp increase is 56 times greater than the corresponding chimp-to-man increase.

2. Qualitatively, the same relative positions among man, chimp, and rat also hold with respect to the structural neuroanatomy of cerebro-cortical dendrites and the waveform neurophysiology of cerebro-cortical electrical activity. (See accompanying illustrations.) These are two of the most significant measuring sticks for brain capacity — and man and chimp are similar in comparison with the obvious disparity between chimp and rat.

3. Comparative brain studies show:

a. Brain weight is 3 pounds for man, 1 pound for chimp, and 0.004 pounds for rat. Therefore, while chimp

brain is 250 times larger than rat brain, human brain is only 3 times larger than chimp brain.

b. The brain/brain-stem weight ratio is extremely similar in man and chimp — much higher than in rat.

c. The relative weight percentage of the *frontal lobes* to total brain weight is perhaps the best weight-ratio-indicator of higher mental functioning. For man and chimp, this ratio is almost identical — when compared with the miniscule frontal lobe ratio in rat.

d. From all appearances, it would take a trained individual to distinguish the cerebro-cortical convolutions of chimp from those of man, while in rat convolutions are unknown.

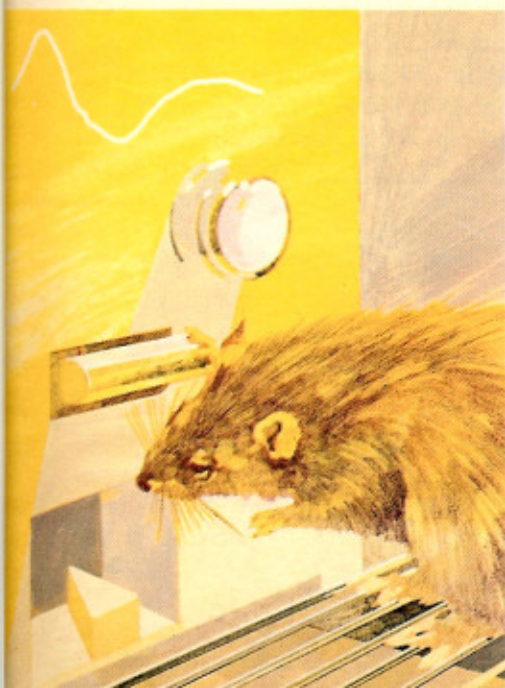
e. It would take a skilled neuro-anatomist to differentiate laminar distribution in human cerebral cortex from the laminar distribution in chimp cerebral cortex — but a *layman* could appreciate the laminar differences between cerebral cortices of chimp and rat. (See previous pages.)

f. All these empirical observations lead to one conclusion: *Chimp brain is enormously more complex than rat brain, whereas in comparison, human brain is only faintly more complex than chimp brain.*

4. Consequently, on the basis of all physical data, if physical brain is the substrate of mental activity, chimp should be mentally superior to rat to a far greater degree than man is mentally superior to chimp. We should logically expect that the mental output of brain function in man, chimp, and rat — the psychological accomplishments of the individuals and the sociological attainments of the species — would closely follow the relative positions of their respective brains, and be rather similar for man and chimp, while much different for chimp and rat. As a result, based on their physical brains alone, humans should think only a *bit* better than chimp,

whereas chimp should think *substantially* better than rat.

5. Precisely the *opposite* is true. *Chimps and rats think very similarly.* Both can learn extraordinarily complex problems involving long sequences of signals and moves. Both have similar drives, motivations, emotions, etc.





Electrical Response in Cerebral Cortex

Pyramidal Cell of Cerebral Cortex

6. But who could honestly say that *man* differs only quantitatively from chimp? Who but man possesses the awareness of ecstasy, the ecstasy of love, the love of beauty, the beauty of accomplishment, the accomplishment of inspiration, the inspiration of creativity, the creativity of wisdom, the wisdom of humility, the humility of knowledge, the knowledge of humor, and the humor of himself? *Man stands apart*. Wholly distinct in quality. A wholly unique creature.

7. We formulate our conclusion:

a. The human brain is qualitatively identical to animal brain, merely continuing the gradual increase in complexity, evidenced by all mammals.

b. All brain research — anatomy, biochemistry, electrophysiology — staunchly proclaims that the human brain is *just barely* superior to chimp brain, whereas chimp brain is *substantially* superior to rat brain.

c. Consequently, *if* the human mind is entirely the product of the human brain, then the human mind can be *just barely* superior to chimp "mind," whereas chimp "mind" must be *substantially* superior to rat "mind."

d. But chimps and rats have qualitatively the *same* compulsive behavioral patterns.

e. And the self-conscious human mind is supreme beyond measure — unequivocally distinct and irrevocably disassociated from the stereotyped behavior of chimp.

f. As a result, it is obvious that the *slim* superiority of the human brain over the animal brain cannot possibly account for this unbridgeable gulf that exists between the uniquely unrestrained human *mind* and the instinctively automatic animal brain.

g. *Therefore, a NON-physical additive must augment the human brain, converting it into the human mind, since no physical component exists that can account for it.*

The human BRAIN cannot explain the human MIND. It's plain. It's simple. There must be a non-physical ingredient in the human mind.



Why the vast difference between animal brain and

HUMAN MIND?

PART V

by Robert L. Kuhn

IN JANUARY and February, we demonstrated that the human *mind* is ENORMOUSLY superior to the output of animal brain.

Then, in the March-April and May issues, we demonstrated that the human *brain* is just BARELY superior to animal brain — and that a *non-physical component* is absolutely essential to transform the human brain into the human mind.

Now, in June, we find out what it all means and begin to answer the ultimate question: What is Man?

IS MAN wholly physical — merely an animal?

Or is he something more — with a non-physical component?

The question is vital. Because if man is wholly physical, then humanity must find physical solutions for its physical problems — before it's too late. (But physical solutions are *not* working — and it's almost too late.)

If, on the other hand, man is *not*

wholly physical, if man *does* have a non-physical component, then humanity must find non-physical solutions for its non-physical problems. And — be it noted — many of his supposed physical problems would then be, in reality, non-physical problems. (Remember, *physical solutions* will never solve *non-physical problems* — no matter how much money and intelligence are allocated and expended.)

What are we? Everything revolves around this pivotal question.

In this series on the difference between animal brain and human mind, we have *not* been dealing with "some interesting problems in psychology and physiology." We have been confronting the fundamental question of human existence!

"Mind-Body Problem"

Many readers will recognize that we seek to solve one of the most basic philosophical problems of all human thought. Throughout its tortuous his-

tory, the "mind-body problem" — as it has come to be known — has had two traditionally accepted solutions:

- (1) *the Dogma of Materialism,*
- (2) *the Doctrine of the Immortality of the Soul.*

And no two theories could represent more opposite schools of thought — even though both are staunchly supported throughout the entire educated world. In the historic struggle between evolutionary science and traditional religion, the materialism-immortal soul controversy remains the classic confrontation.

Everybody has his or her opinion. And you have yours. But millions of people, including thousands of scholars, fervently support the position *opposite* to yours. You think *they're* irrational. They think *you're* irrational. Somebody must be wrong someplace.

Why Should WE Know?

We hear it. It's an honest question that deserves a straightforward

answer: "How can Ambassador College and *The PLAIN TRUTH* magazine claim the right — have the audacity — to really answer the ultimate questions of *mind* and *man* when thousands of scholars and thinkers have been unable to find these answers throughout centuries of search?"

First, a tangential reply: If our generation does NOT find these ultimate answers, no other generation will ever get the chance.

Now to the logical reply: Our age has witnessed a gigantic explosion of technical information. In addition, the stifling shackles of tradition have been broken. We now have full freedom for truly original thought. It is within this context that we seek to solve the mind-body problem — the ultimate question of human existence.

It can be solved by combining and interrelating the newly discovered physical facts of contemporary brain research with the recently uncovered non-physical truths of the Bible.

Contemporary brain research and the Bible have at least one thing in common: their primary interest is man — from the neck up. But from there on, the two fields are as radically different as is possible within the scope of human knowledge. This is why a cross-pollination between the two at Ambassador College has proved so fruitful.

It has only been in the last few years that such a mating between the neurological sciences and Biblical theology could yield any viable offspring. Only recently have the multiple academic disciplines composing brain research acquired the full range of information necessary to properly evaluate the human brain. And perhaps of even more importance, only recently has a simple understanding of what the Bible actually *says* been possible through the establishment of a college free from the repressive dogmas and stagnating myths of traditional religions — so necessary if Biblical theology is to properly evaluate the human mind.

Brain research for the human brain.

Biblical theology for the human mind.

Don't pre-judge the marriage.
Put it to the test.

Review and Overview

In the first two articles, we saw how the activities of the human mind are *immeasurably* more advanced than the activities of animal brain.

In the third and fourth articles we saw how, by contrast, the anatomy, physiology and biochemistry of the human brain are just barely more complex than the anatomy, physiology and biochemistry of the whale, dolphin and ape brains.

How can this seeming contradiction be explained? Only by the realization that the human mind does in fact contain a *non-physical* component!

There are just no alternative explanations! If the human brain exhibited a credible physiological explanation — a structure, function or mechanism not seen in animal brain — wouldn't materialistic scientists have immediately publicized the data in order to support their contention that human beings are 100% physical? But they have not — because they cannot.

Of course, evolutionary theorists have long enjoyed pointing out the overt similarities between human and ape brains in order to corroborate their belief that both evolved from the same primeval source. It is supremely ironic that what they have actually stumbled upon is the most significant scientific observation in history — *irrefutably attesting to the necessary existence of a non-physical component in the human mind*. Without this non-physical factor, man could be nothing more than a "super ape" (or "super dolphin"), more intelligent than a normal chimp (or dolphin) to the *same limited* degree that a chimp (or dolphin) is more intelligent than a cat.

I believe that there is a fundamental mystery in my existence, transcending any biological account of the develop-

(Continued on page 42)

Answers to

IN OUR previous articles, we have demonstrated that a non-physical component must exist in the human mind. But materialism's assertion that the human mind can be fully explained by the human *brain alone* — without any non-physical component involved — can be made a very complex philosophical case.

Some of the materialist's arguments are somewhat reasonable, others rather abstruse, still others rather ridiculous. But all should be answered. At a future date, we will publish a detailed analysis of both materialism's arguments and our counterarguments. For the present, the following summary will suffice.

Argument One: An objection to our employing the intrinsic cortex/total cortex ratio as the critical factor which determines the level of higher mental activity.

Counterargument: This ratio is not "ours" — it is the one used by most experts. Furthermore, we have referred to over *twenty other criteria* — all yielding the same conclusion.

Argument Two: An objection to our employing any known criteria to determine the level of higher mental activity.

Counterargument: Modern-day research is aware of all the basic anatomical structures, physiological functions and biochemical mechanisms which make the brain work. Nothing "radically new" can ever be suddenly discovered in the human brain which is not also present in chimp and dolphin brains.

Argument Three: So we know all the relevant criteria of brain function — but perhaps we do not yet know enough about them.

Counterargument: Granted, much needs to be learned. But the electron microscope has enabled neuroanatomists to look at brain details of one millionth of an inch and the

Materialism's Objections

oscilloscope has enabled neurophysiologists to record electrical charges of one millionth of a volt. And there are absolutely no fundamental differences between human brain and animal brain.

Argument Four: An objection to our use of *linear* representations — in light of the *non-linear* relationships expected from complex systems.

Counterargument: All linear representations were only intended to *qualitatively present* the case — not to *quantitatively prove* it. The point, however, was not the exact relationship between the various mammals — but rather the relative position of man. Only man breaks the curve — only man deviates from the trajectories set by the mammals when mental activity is compared with brain.

Argument Five: An analogy to the critical mass needed for atomic fission in which a precise amount and ratio of U^{235} transforms a few seemingly inert pounds of uranium into an atomic explosion. In the analogy, the materialist presumes that only in man is the amount and ratio of intrinsic cerebral cortex sufficiently large to reach "critical mass" — and therefore only in man does the resultant *psychological* explosion of self-consciousness and creative intellect occur.

Argument Six: The "little-difference-can-go-a-long-way theory" — or, in a shorter form, the "threshold theory." (Arguments Five and Six, together as a tag-team, form materialism's most popular objection to a non-physical mind component.)

Counterargument: Having been conceived by circular reasoning, Arguments Five and Six cannot be rigorously refuted. (This is hardly surprising, since they were designed for this very purpose.) But we *can* demonstrate enormous differences in brain sizes (and therefore amounts

of cerebral cortices) — the human brain can vary from 32 to 65 ounces, the ape cranial capacity from 4 to 39 cubic inches, the cetacean (dolphin-whale) brain, from under 1 to over 19 pounds — *all without any resultant differences in thinking and behavior.*

Then there are the tragically deformed microcephalic humans — with brains as small as 10 ounces — who still manifest clear signs of being humans, signs absent from the much larger ape or cetacean brains.

But the thrust of our counterargument must simply be to point out the motivation and methodology by which materialism's arguments were devised. Observe *circular reasoning* in action: First, the materialist examines the human brain in order to catalogue its distinguishing characteristics. Next, he assumes that these (very minor) differences would, *by themselves*, cause the totality of human thought — "if" found in any animal. He then "discovers" that only the human brain has these very minor differences. Completing his circle, the beleaguered materialist therefore concludes that "it is to be expected that only human beings should show the highest mental activities." Circular reasoning in the raw! What the materialist has not at all proved is that very minor physiological differences can account for the great gap between the output of animal brain and the human mind.

Argument Seven: A specific application of the theory of Emergent Evolution.

Counterargument: Emergent Evolution relies on "physical mysticism" to replace a non-physical mind component. (Why haven't the brains of whale and ape "emerged"?)

Argument Eight: An objection to our use of the scientific method to reach a conclusion which goes beyond science.

Counterargument: The scientific method is simply a system of logically analyzing the proper data. And the existence of non-physical reality does not go beyond science — it is rather the conclusion toward which science is pointing.

Argument Nine: An objection to our solving the problems which arise from a purely physical explanation of the human mind by introducing other problems which arise from the postulation of a non-physical explanation for the human mind.

Counterargument: We grant that the introduction of a non-physical mind component raises many new questions. But so did the atomic theory and the wild idea that the earth was not the center of the universe. New truth expands horizons.

Argument Ten: A plea of "temporary ignorance" for man's present understanding of what constitutes "the physical."

Counterargument: Here a "new physical component" is being conveniently substituted for the Biblical "non-physical component." Yet modern physics understands so much about the nature of mass and energy that it seems impossible to sufficiently expand the boundaries of "the physical." Nonetheless, it is logically impossible to refute an argument which states that "an alternative solution will be found in the future!"

So we ask: What empirical observation, experimental result or theoretical deduction could conceivably prove the materialist wrong in *any* of his arguments? None! The materialist has long labored to develop his "disproof-proof" system of assumptions — resembling, by the way, paranoid obsessions — which can disguise all disparities and conceal all disruptions generated by the real existence of a non-physical component in the human mind. ■

(Continued from page 40)

ment of my body (including my brain) with its genetic inheritance and its evolutionary origin...but this theory [evolution] fails completely to provide me with an explanation of my origin as the person I experience myself to be with my self-awareness and unique personality. (Sir John Eccles, *The Human Mind*)

The human brain cannot possibly account for the human mind. A non-physical component is needed. There is no other way.

Are There "Immortal Souls"?

Materialism is wrong. But does that magically cause immortal souls to exist? That would be faulty logic. Just because Russian Communism is wrong, must German Nazism have been right? (Far right, yes — politically! Absolutely right, no!)

The world has arbitrarily established materialism and the immortality of the soul as the basic alternatives to answer the question: "What is man?" So cowed men have dutifully accepted one side or the other — and then firmly dedicated themselves to wipe out the "lunacy" of the opposing side. It is an interesting spectacle — much like the public games in ancient Rome — it amuses the people and dulls their minds.

But could it be possible that *both* choices are wrong? (See the accompanying boxes.) Could both the dogma of materialism and the doctrine of immortal souls be bedfellows in a diabolically deceptive plot — a plot designed to keep man bickering about nothing, argumentatively off balance, and apart from the truth?

Could there be a *third* dimension to the mind-body problem?

Non-Physical Reality

Human beings are creatures of extremes. And so when modern man disposed of immortal souls, he quite predictably jumped to the opposite extreme and denied everything non-physical. But again — that's faulty logic.

Biblical history abounds with occurrences and prophecies which defy

an entirely physical explanation: the plagues on Egypt; Ezekiel's clear, in-advance description of the specific manner of Tyre's destruction; Daniel's astoundingly intricate, prophetic delineation of the successive histories of the Babylonian, Persian, Macedonian, and Roman empires — and on and on.

Non-physical reality can also be substantiated by the thousands of people who have reported all sorts of supernatural phenomena — happenings which defy the physical laws of space, time, mass and energy — telepathy, clairvoyance, psychokinesis, miraculous healings, etc. Surely many of these tales are pure fabrications, woven by kooks, fakes, crackpots and charlatans; many others can be classified as illusions, hallucinations, self-deceptions and coincidences.

But are they *all*? It seems rationally implausible. Remember, we don't need a "democratic" decision, where more than 50% of all supernatural phenomena must be valid to prove the existence of any non-physical reality. If only *one* event could not be totally accounted for by physical means, our point would be fully made!

Then there are the rigorously scientific studies of Dr. J. B. Rhine and his colleagues in extrasensory perception (ESP). Statistical reliability, experimental honesty and psychological rigor are the touchstones of these pioneering investigations. Of course, there are some ESP researchers — notably the Russians — whose ideological bias necessitates a physical explanation for psychic phenomena. However, Dr. Rhine has shown that ESP operates at the same level of significance when the parameters of mass, space and time are greatly varied. And since mass, space and time are the boundary characteristics of the physical world — and since ESP is completely independent of all three — Dr. Rhine concludes:

There simply is no explanation based on physical principles that will do... no hypothesis which could explain ESP phenomena as a whole on a physical basis has been offered... [and] the most devoted physicalist finds himself

in the sloughs of insuperable intellectual difficulty.

The Spirit in Man

The non-physical is real. It exists. And the human brain must have a non-physical component to transform it into the human mind.

But what *IS* this "non-physical mind-component"? It is *not* the fabled immortal soul. But what is it? How does it work? What happens to it when you die?

To avoid needless speculation, we will label this non-physical mind component "*the spirit in man*" — using the word "spirit" in a non-restrictive sense, only meaning something different from the physical, without any other connotation implied.

The spirit in man, then, is that essence which imparts human mind power to physical brain tissue. It is the means by which man exercises his promised "dominion" over all other creatures (Gen. 1:26).

The spirit in man is *not* a soul; *it has absolutely no consciousness apart from the brain*. Job speaks of such a spirit: "... it is a spirit in man... that giveth them understanding." (Job 32:8, Jewish Pub. Soc.) Paul asks, "What human being can understand the thoughts of a man except [by means of] the spirit of man which is in him" (I Cor. 2:11, Moffatt and KJV). This simply states that self-consciousness — the awareness of thoughts, not just the thoughts themselves — is generated by the spirit in man.

Zechariah shows that the Eternal God of Israel "formeth the spirit of man within him" (Zech. 12:1). No immortal soul here — the "spirit of man" and the "him" are separate entities, with the former located "*within*" the latter. Paul confirms that this "spirit of man" is "*in him*" (I Cor. 2:11). This does *not* say that man is a spirit, but rather that this "spirit" is *located in the man*. If a man swallows a marble, that marble would be in him. Does that make the man a marble? Perhaps the man has "lost his

marbles," but he is surely not a marble himself.

If we are not careful, we can very quickly begin to think that the spirit in man possesses conscious sensation, thought and awareness independent from the brain. This is wholly wrong! The spirit in man, of itself, cannot sense, cannot think, cannot reason, cannot know. The brain performs these tasks. But to engender the exquisite qualities which constitute the human mind, the spirit in man must be added.

How? What and where is the "interface" between the spirit in man and the human brain — that is, how does the non-physical spirit in man link up with and interact with the physical brain? This question of the interface or common boundary between the spirit in man and the human brain is most fundamental. But at present, we cannot even postulate — much less isolate — the specific mechanisms by which the spirit in man imparts human mind power to cerebro-cortical nerve cells. But we can empirically evaluate the results of this union and then reason inductively.

Perhaps an analogy will help.

An Analogy

We can liken the spirit in man to a blank recording tape and the human brain to a tape recorder — neither one able to generate the human mind without the other.

The tape recorder houses all the required machinery and wirings for its particular operation — which is sound reproduction. Likewise, the human brain contains all the necessary structures and circuits for its manifold responsibilities — which are sensation, memory, emotion, creativity, etc.

Now, just as the tape recorder produces nothing without the recording tape running through it, the human brain is severely limited without the spirit in man joined to it.¹

The recording tape imparts the capacity of auditory reproduction to the tape recorder, while at the same time, the tape itself is recording and storing the magnetic stamp impress from the

The Fallacy of an Immortal Soul

WHERE did immortal souls come from? Much to the chagrin of contemporary Christianity, quite the opposite is propounded by the Bible. In Genesis 2:7, "man became [was not inherently] a living soul." Ezekiel twice emphasized that "the soul that sinneth, it shall die" (Ezek. 18:4, 20). Jesus plainly stated that both the body and soul can be destroyed in hell (Matt. 10:28). John agreed: "...no murderer has eternal life abiding in him!" (I John 3:15.) And Paul concurred: "...the wages of sin is death" (Rom. 6:23).

"But," traditional religionists retort, "death means a conscious eternal life in hell" — whether that be a literal place or just a state of mind. Apparently they have not read — or choose to overrule — the Psalmist, who said of man, "He returneth to his earth; in that very day his thoughts perish" (Psalm 146:4). Solomon is also ignored — he proclaimed "the dead know not any thing" (Eccl. 9:5).

Are we dealing with a problem of translation? Not so. The English word "soul" is the King James translation of the Hebrew word *nephesh* or the Greek word *psuche*. Both literally mean "breath" — and both refer to every breath-bearing being, animal as well as human.¹

The Biblical *soul* is just the physical life of man and beast — man and beast alike. Solomon makes this obvious: "For man's fate is a beast's fate, one fate befalls them both; as the one dies so the other dies, the same breath is in them all" (Eccl. 3:19, Moffatt).

Nephesh is also used to represent "dead bodies" — "dead nepheshes" or "dead souls"! (Lev. 21:1, 11;

Num. 6:6, 11, etc.) And so, ironically enough, the Biblical "soul" is actually the "body" — and it dies all over.

David was a man after God's own heart (Acts 13:22) — he is to be the eternal king over Israel (Ezek. 37:24). If anybody deserved to have an immortal soul in heaven — if that's where immortal souls are supposed to go — David certainly should have had one there. However, Peter tells quite a different story in Acts 2:29 and 34: "David... is both dead and buried... not ascended



Gustave Doré

Dante's version of Hell.

into the heavens." This was after the resurrection of Christ — and over 1,000 years after David had died.

The expression "immortal soul" never appears in the Bible — neither is there any allusion to it. True enough, a "resurrection from the dead" is frequently mentioned — but a "resurrection," by definition, necessitates utterly dead individuals, with no room for conscious immortal souls flitting around someplace.

¹ *Nephesh* refers to animals in Genesis 1:20, 21, 24; 2:19; etc. — where it is translated "creature" to avoid doctrinal contradictions — and also in Genesis 1:30; 9:4; Leviticus 11:10, 46, etc. *Psuche* refers to animals in Revelation 8:9 and 16:3. *Nephesh* and *psuche* — the "souls" of the Bible — mean animal life as well as human life! No immortal souls here.

The Pagan Origin of Immortal Souls

SINCE immortal souls didn't come from the Bible, where did our Judeo-Christian religions find them? The *Jewish Encyclopedia* freely admits that:

The belief that the soul continues its existence after the dissolution of the body is...speculation...nowhere expressly taught in Holy Scripture.... The belief in the immortality of the soul came to the Jews from contact with Greek thought and chiefly through the philosophy of Plato, its principal exponent, who was led to it through Orphic and Eleusinian mysteries in which Babylonian and Egyptian views were strangely blended.

Plato is also the authoritative source for the "Christian fathers" (e.g., Origen, Tertullian) who, two centuries after the death of their supposed founder, first introduced immortal souls into a rapidly paganized Christianity.

Most have assumed that the doctrines of traditional Christianity have come from the Bible. Well, compare present-day teachings on the immortality of the soul with what Plato wrote in the *Phaedo*:

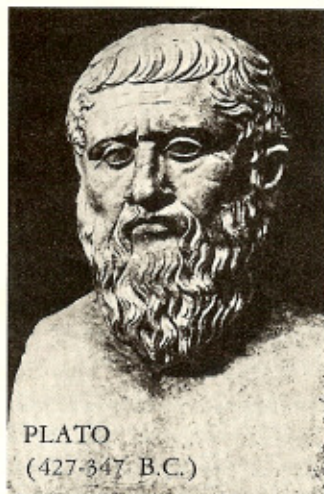
...the soul is shown to be immortal, and since immortal, indestructible. ...Do we believe there is any such thing as death? To be sure. And is this anything but the separation of the soul and body? And being dead is the attainment of this separation, when the soul exists in herself and separate from the body, and the body is parted from the soul. *That is death. ...Death is merely the separation of soul and body.*

It is interesting that materialism and immortal soulism *both* received their first detailed explanation in ancient Greek philosophy — and this occurred at approximately the same time in history.

Materialism — the pre-Socratic philosophers, in and prior to the 5th century B.C. (chiefly Democritus), and the Stoics and Epicureans in the early 4th and 3rd centuries.

Immortal Soulism — Orphic mysteries in the 6th century B.C., Pindar in the 5th, and Plato in the 4th.

Plato argued the first comprehensive case for immortal souls, while just a very few years later, Epicurus'



PLATO
(427-347 B.C.)

Scripta Mathematica

chief objective was to abolish Plato's dualism between mind and matter.

Of course, neither philosophy originated in Greece. Both can be traced back to Egypt. (As a matter of fact, the first record of the soul being immortal goes clear back to the Garden of Eden, where "the serpent said unto the woman, 'Ye shall not surely die' — Gen. 3:4.) Nevertheless, the first in-depth discourse — available to modern man — on either materialism or immortal souls came from Greece.

These "coincidences" of time and place of origin and exposition for both materialism and immortal soulism suggest that we may not be dealing with sworn enemies after all — but rather, figuratively speaking, with partners who feign mutual antagonism and mortal competition, partners who are actually working hand-in-hand, *deceiving the entire world.*

tape recorder. Analogously, the spirit in man imparts the capacity of creative intellect and self-conscious personality to the brain, while at the same time, the spirit in man itself is recording and storing the stamp impress from the brain.²

At death, the spirit in man "tape" is complete — it contains, at that time, every nuance of life, thought, personality and character which made us just exactly the singular individual who we were. The "tape" can then be "filed" — until needed again for reactivation, an event called the "*resurrection*" in Biblical terminology. Solomon, whose writings decimate the immortal soul fantasy, alludes to this "filing": "Then [at death] shall the dust [the human being] return to the earth as it was, and the spirit [the spirit-in-man tape] shall return unto God who gave it" (Eccl. 12:7).

Again, don't make the mistake of attributing consciousness to this filed-away "tape" — it is no more the former living individual than a boxed piece of magnetic recording tape is the peaceful third movement of Beethoven's Ninth Symphony. In order to reconstitute those serene musical vibrations from the magnetic recording tape, the tape must be reinserted into a tape recorder. Similarly, in order to reconstitute the specific person's conscious awareness from the "spirit-in-man tape," the spirit in man must be reinserted into a brain. Therefore a reorganized brain and body (whether spiritual or physical) are necessary adjuncts to the spirit-in-man tape in order to reactivate — or *resurrect* — the original individual.³

Importance for Now

We are no longer harassed by the dogma of materialism. And we are no longer harnessed by the doctrine of immortal souls. We are armed with the sure knowledge of the *Biblical spirit in man*.

And it is in the arena of *human survival* that the spirit in man takes on monumental significance because the mere *existence* of a spiritual com-

ponent in the human mind unveils the fundamental CAUSE underlying all of mankind's troubles.

Consider what the spirit in man signifies — that the human mind operates with a *spiritual* dimension. And that means SPIRITUAL PROBLEMS. The spirit in man adds *spiritual problems* to the physical human brain! (The human mind and its resultant spiritual problems are as directly related as are animal brain and its resultant animal instinct. And so while the animal brain maintains perfect harmony in nature, the human mind is about to utterly destroy the earth!)

That's the crux of the matter — that's why mankind is planning its own extinction. Human beings have spiritual problems. But only PHYSICAL SOLUTIONS! And physical solutions just will not solve spiritual problems. Ever!

We can run the gamut from one extreme physical solution to the other — without changing the futility of using physical solutions to solve spiritual problems one whit. We can choose any variation from capitalism to socialism, conservatism to liberalism, isolationism to internationalism, monarchy to anarchy, self-help to government handout, tariffs to foreign aid, segregation to integration — and the end result will always be the same: miserable people and a humanity headed for self-destruction.

Physical solutions cannot solve spiritual problems. This is why the spirit in man must become the focal point of all human knowledge, because it enables us to understand — for the first time — that all man's physical difficulties are *caused* by deep-seated *spiritual* complications. No amount of *physical* measures — no matter how intricate or expensive — will ever improve the overall welfare and happiness of the human race. If we ever hope to solve our physical problems and have an abundantly happy world, our SPIRITUAL problems must be solved *first*.

The spirit in man is the key to man. It suddenly reorients us. It points us

in the proper direction. It tells us where we must look if we are ever to have a peaceful planet.

Spiritual solutions are needed to solve spiritual problems. If this one fundamental point were understood, man would be forced to realize that the structure of his entire society — from the government of nations to the behavior of children — must be radically revised before people can at last be joyfully busy with peace and progress.

We desperately need *spiritual solutions* for our spiritual problems. That's what the existence of the spirit in man must teach us. ■

1 The analogy breaks down a bit here. A tape recorder cannot produce sound at all without recording tape, while the human brain could function without the spirit in man.

2 Again, this analogy breaks down a bit. Whereas only the magnetic recording tape records the sound impulses in our analogy, both the physical brain and the spirit in man could record the memory impulses in the human mind.

3 In a second analogy, we can liken the spirit in man to a chemical catalyst and the physical human brain to chemicals which can undergo a specific reaction. The catalyst is inert of itself — but when put into an environment with the appropriate chemical reactants, the catalyst will immediately accelerate whatever chemical reactions are presently occurring.

The analogy to the spirit in man is direct. The spirit in man greatly magnifies and accelerates the normal functions of the physical (animal) brain such as thinking, behavior, intelligence, consciousness, etc. In addition, the spirit in man generates and precipitates a whole variety of radically new mental functions.

Of course, this analogy is also incomplete. Whereas the chemical catalyst is not appreciably changed as it performs its duties in a test tube, the spirit in man is markedly altered as it performs its duties in the human mind — so much altered that the spirit in man becomes a complete template for resurrecting the entire human being, even after thousands of years.

Personal from



(Continued from page 1)

also at Mr. and Mrs. Rader's home in Beverly Hills. Dr. Singh is Executive Secretary to President V. V. Giri, and is probably the leading advocate in the world for "world peace through international law." Dr. Singh also has addressed our Ambassador College student bodies at all three campuses.

Once again we were dinner guests

at the residence of Dr. and Mrs. Singh, where I met, among other guests, U.S. Ambassador Kenneth Keating, former U.S. Senator from New York. I had wanted to meet him for some time, but he had always been away when I was in New Delhi. On a previous visit, his top assistant had come, but this was my first meeting with the Ambassador. He said he had heard a lot about me, and had wanted to meet me for some time. Ambassador Keating is a distinguished-appearing man. He has one thing in common with me — white hair.

He was quite interested in our work for world peace. We arranged for Mr. Rader to visit him the following day at the U.S. Embassy, to brief him on it in depth.

I have previously reported in my *Personal* article in *The PLAIN TRUTH* my meeting with the Indian Prime Minister, Mrs. Indira Gandhi, in December 1970. That *Personal* article covered Mrs. Gandhi's concern with the situation in East Pakistan, and the flood of refugees that then were flooding across the border into India. The situation even then was worsening, and threatened dire consequences. In this world, there is nothing but TROUBLE — evils on every side — violence, wars and threats of wars.

In my *Personal* in the January 1972 *PLAIN TRUTH*, I covered my visit to the United Nations in New York, and meetings with President Malik of the Assembly, and with the Deputy Secretary of the Security Council. That was last December. Both of these men expressed great concern that war seemed imminent between India and Pakistan. Here, again, is an illustration of the futility of the United Nations as a means of enforcing world peace.

Of course that war has happened and is ended, with victory for India.

Since, and stemming from that war, relations, unfortunately, have become very strained between India and the United States. At Dr. Singh's dinner we discussed this strained relationship.

Ambassador Keating told me that