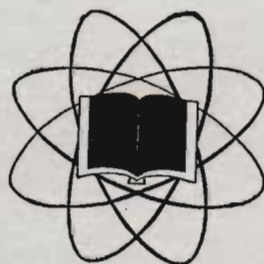


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AMERICAN SCIENTIFIC AFFILIATION



The fear of the Lord is the beginning of wisdom. Psalm 111:10

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JUNE, 1957

No. 2

The American Scientific Affiliation

(INCORPORATED)

The American Scientific Affiliation was organized in 1941 by a group of Christian men of science. The purpose of the organization is to study those topics germane to the conviction that the frameworks of scientific knowledge and a conservative Christian faith are compatible.

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The Journal of the American Scientific Affiliation is issued quarterly. Its contents include primarily subjects both directly or indirectly related to the purpose of the organization, news of current trends in science (including sociology and anthropology), and book reviews.

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The Journal Of The American Scientific Affiliation

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EDITORIAL

Parapsychology

At the last annual convention of the Affiliation a symposium was held on extrasensory perception. In this issue of the Journal are published the papers given at the symposium.

It should be pointed out that these papers represent the opinions and works of the authors and not of the Affiliation. This of course is true of all papers published in the Journal. The subject of parapsychology is a rather controversial one at this time and individual feelings toward the subject, on the part of ASA members, range from belief to scepticism.

New Book

The forthcoming book on the Darwin centennial is coming along well, under the editorship of Dr. R. L. Mixter. One chapter in preliminary form was published in the last issue of the Journal.

Part of the reason for printing these chapters is to get suggestions before they are put into final form, which we believe will be appreciated by the authors. Probably time will not permit us to publish all the chapters in this way. They are appearing in the order in which they have been made available to the Journal.

NEW MEMBERS

Edgar N. Brightbill, Research Engineer, Polychemicals Dept., Research Division of E. I. duPont de Nemours & Co., Wilmington, Delaware. He has earned a B.S., M.S. and Ph.D. degrees from the University of Penna. He resides at 1112 Fawn Rd., Graylyn Crest, Wilmington, Delaware.

Stephen W. Calhoon, Jr., is an instructor in chemistry at Houghton College, Houghton, New York, where he also earned the B.S. degree in Chemistry.

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Robert C. Lehman received the A.B. degree in

mathematics from Eastern Mennonite College where he is presently employed as an instructor of physics.

Robert L. Greenhow is a missionary in Belgian Congo. He received a B.A.Sc. from the University of Toronto in Chemical Engineering in 1942.

Robert L. Herrmann, 49 Overlook Rd., Arlington 74, Mass., employed as Research Associate at Mass. Inst. of Tech., received a B.S. degree from Purdue University, and his Ph.D. from the Michigan State University.

James F. Jekel, 130 E. Bodley Ave., Kirkwood, Missouri, is a student in medical school. He has received an A.B. degree from Wesleyan University.

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William F. Miller earned the B.A. degree from Goshen College. He is at present employed by the Department of Education, St. John's, Newfoundland, Canada as teacher and principal of United Church School, Baie Verte, Newfoundland.

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Formal, Scholarly Research In Parapsychology

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Introduction

A man named Dunninger is entertaining millions today with what appears to be tremendous powers of extrasensory perception. A man named Bernstein has written a book about *Bridey Murphy*¹ that presumes to prove that those that lived in the past can speak through those living in the present. This book has had ten printings in one year at \$3.75 per copy—plus other editions in English, Danish, Spanish, Swedish, French, Italian, and Dutch. Radio programs and magazine articles on some phase of extrasensory perception are appearing almost daily—and the public eats them up.

And the *Christian* public eats them up, too—and then goes to the preacher and asks: “Preacher, what about Dunninger? What about Bridey Murphy?” And the majority of Bible-believing preachers mumble something or other about fraud or error or demons or Satan and re-bury their heads in the sand along with the proverbial ostrich.

I’m one of those preachers that is a target for such questions—especially since I’m also a scientist—having been a research chemist before I found Christ as Saviour and Lord and surrendered my life for the Christian ministry. But the trouble is, I can’t find any “stock answer”—because the more I investigate the more I find that Parapsychology is a *legitimate science*—in the sense that the word “science” is usually understood: “The examination and classification of *facts*”.

At this point it would not be amiss to remind ourselves of that which would seem to be so elementary as to be almost profane—that is, the difference between *fact* and *theory*. In practically *every* instance—possibly with no exceptions whatsoever—the world’s leading parapsychologists are *not Christians in the historic sense of the word* (do not believe the sixty-six books of the Bible to be the verbally inspired Word of God). Consequently, their *interpretation* of the *facts* they discover almost inevitably contradicts the interpretation that God’s Word would demand (and they *must* interpret, incidentally, because they are really “on the spot” to give some reasonable interpretation of facts that would seem to contradict the generally accepted “laws” of nature). Many Christians, then, read *interpretations* and presume that the whole field of parapsychology is a sorcerer’s den.

But the *facts* are still there . . . and the public knows it . . . and we’ve got to face it. (And what many don’t

know is that the *facts* seem to indicate that Dunninger is a great showman—nothing more—as is Bernstein; though every part of the Bridey Murphy matter could be explained by *Psychology* without resort to parapsychology. But these same *facts* tell a story more amazing than Dunninger or Bernstein have ever produced). The discoveries of parapsychology need the full light of God’s Word shed upon them that the world might see that the Holy Scriptures have the only adequate interpretation of these phenomena.

It might disturb many Christians to have to admit that certain *natural* laws make possible precognition, retrocognition, clairvoyance, psychokinesis, etc., without the *supernatural* intervention of personalities outside this universe. But then again, in spite of II Peter 3:10 many Christians were *surprised* to learn from Einstein that God would not have to work a *miracle* but simply use already-operating laws of nature to transform the matter of the universe into “fervent energy.” And I really believe some Christians (though professing to believe that God created the heavens and earth and necessarily limited them) were surprised to learn that the universe *is* limited—and not by some “super-natural” wall of heavenly stones, but by natural laws . . . much as scientists who profess to understand Einstein’s space-time continuum seem surprised to learn of psi phenomena where neither space nor time is a limiting factor.

Ancient Research

It would be hard to know where to begin tracing the history of formal, scholarly research in parapsychology. Saint Augustine did much formal research in this field with a clairvoyant, Albicrius, who was able to locate lost articles—apparently by *extrasensory* perception. He also investigated an apparent case of telepathy in a hysterical patient who was visited periodically by his priest. Their homes were 12 miles apart, and yet the patient seemed to know when the priest left home to visit him, and when and how he would arrive². And Plutarch³ propounded a thoroughgoing theory of mental telepathy in which he theorized that spiritual beings in the act of thinking set up vibrations in the air which enable other spiritual beings, and also certain abnormally sensitive men, to apprehend their thoughts.

Modern Research

From a *Christian* standpoint, we might say that modern research in parapsychology had its roots in nineteenth century rationalism and materialism. Until

the nineteenth century, most of the world's peoples took "spiritual" phenomena for granted. Christians, of course, accepted—without feeling the need of human experimentation—the picture given in God's Word of the activities of God (the infinite, eternal, unchangeable *spirit*), angels (good spirits, messengers of God), demons (evil spirits, fallen angels), as well as their ability to communicate with and manifest themselves to the indestructible spirit of man which, in the case of a Christian, could be "absent from the body but present with the Lord" (II Cor. 5:8); or, in the case of the unbeliever, absent from the body but conscious "in torment" (Luke 16).*

Likewise, each other religion had a place for the *spirit* beings it knew to be active in various relationships to men. And even the peoples who had no formal religion nevertheless exercised various degrees of credulity toward the reported activities of "ghosts," "oracles," "haunts," etc.

At the beginning of the nineteenth century a large segment of "educated" mankind began to feel that it could examine anything in the universe under the scientific microscope, and that the scientist's mind could understand and explain anything that is within the realm of reality. Since demons and ghosts and haunts and spirits don't obey the "laws" which man's brilliant mind had discovered, this was *prima facie* evidence that there couldn't be any such thing. It was during that era that "spiritual" phenomena were the special reserve of a fringe commonly regarded as lunatic.

But just because scientists said there weren't any such things, spiritual phenomena didn't cease to exist. And though the scientist labeled many phenomena unexplainable by his "natural" laws as "superstition" these phenomena continued to occur, and became all the more noticeable because folks had been told that there wasn't any such thing. And at the same time, men such as Einstein were demonstrating that the idolized "laws" of Newtonian physics and Euclidean geometry were no laws at all, but simply poor attempts to explain what men saw, by forgetting its relation to the rest of the universe.

So, toward the end of the nineteenth century many with scientific backgrounds decided they had as much right to go hunting telepathic, clairvoyant, psychokinetic ghosts that didn't seem to obey the so-called "laws" of space-time, matter-energy as did physicists to go hunting the photon, electron, mesitron ghosts that didn't seem to obey these same "laws." So they re-

* Note, however, that there has never been much Christian thought on the subject of HUMAN spirit-to-spirit communication without use of physical organs. Certainly humans in heaven and hell before the resurrection WILL communicate with one another (Cf. Luke 16). *Will their spirits have an ADDED capacity then which they do NOT have now?*

fused to longer ignore "paranormal" phenomena, but rather began turning the searchlights of scientific research upon the realm of the "psyche"—which would include the *Biblical* realm of the *spirit* as well as that area of the temporal *between* the realm of the spirit and that of the *brain*.

Many of these scientists entered this field of research just to prove once for all that there is *not* a realm of reality beyond the physical. Others had been convinced that there *is* a vast realm *beyond* psychology which *exists*, but which had never been explored. Thus was born the science of *parapsychology*.

The Science Of Parapsychology

Some would begin their discussion of the *science* of parapsychology with the work of Friedrich Anton Mesmer (1733-1815). It would not be wise to take space here to discuss Mesmer's life and work since it is familiar to most and available to the rest in the nearest encyclopædia. The important thing about Mesmer is that he discovered a means of healing which medical science could not understand, so a committee of the world's leading scientists, including *Ben Franklin*, closed their eyes and said "there is no such thing."

Of course, Mesmer ignorantly gave his discovery a name that represented a false *theory*—"animal magnetism." So a century later his discovery had to be relabeled "*hypnotism*" to rid it of all the reproach connected with Mesmer's name and theory. But to this day medical science has not given an adequate explanation of the *fact* that one mind can exercise power over the bodily processes of another body. Medicine uses the *effects* of hypnotism constantly, but I think most doctors, whether they admit it or not, realize that their *theories* as to how those effects are produced are inadequate.

The First Research Societies

The first recorded society for scientific research in the field of parapsychology was at Cambridge University in 1852. It was there that a group of young men, many of them destined for brilliant careers, founded the "Cambridge Ghost Society" for the critical investigation of reports of "ghosts" and "hauntings" of the kind familiar to popular tradition⁵. Soon afterward there was organized at Oxford University a similar group named "The Phantasmological Society"⁶.

In 1882 Dr. Henry Sidgwick, professor at Trinity College, London, who had taken an active interest in the work of the Cambridge group, gathered around him a group of eminent scientists and, together, they organized the British Society for Psychical Research. He and his wife, the President of Newnham College, gave a great part of their time to research and preparation of reports and papers. Along with Prof. Sidgwick, the first President, were Vice Presidents Prof. W. F. Barrett, F.R.S.E., Royal College of Science, Dublin; and Prof. Balfour Stewart, F.R.S., Owens College, Man-

chester. Members included a large number of well-known Fellows of various learned and royal societies, professional men, and members of Parliament. In the following years membership in this society included re-known scientists and scholars from almost every science and art known to man.

Among the subjects first taken up for examination and so far as possible, for experimental study, were

1. Thought-transference, or an examination into the nature and extent of any influence which may be exerted by one mind upon another apart from any generally recognized mode of perception or communication.

2. The study of hypnotism and forms of so-called mesmeric trance.

3. An investigation of well-authenticated reports regarding apparitions and disturbances in houses reputed to be haunted.

4. An inquiry into various psychical phenomena commonly called "spiritualistic." ⁷

By 1887 the society had uncovered 370 cases of hauntings, eighteen of which gave "irrefutable" proof of some ultra-physical agency⁸. Naturally, these findings by such an eminent group of scholars aroused interest around the world.

Because of the challenge given by the work and publications of the British investigators, other similar societies arose in the years following in various lands. An American Society for Psychical Research was founded in 1885. It later became a branch of the British Society until 1905, when it was re-established as an independent organization. Recently a medical section composed of MD's has been formed within the society. The Society for Parapsychology was founded in 1948 in Washington, D.C., announcing as its purpose "To advance the science of parapsychology and to promote its study" ⁹. There are various other societies for research in parapsychology in such countries as Norway, France, Germany, The Netherlands, etc.

In 1921 the First International Conference of Psychical Research was held at Copenhagen, Denmark, and conferences have been held regularly since that time. The First International Conference of Parapsychological Studies was held at the University of Utrecht, The Netherlands, in 1953 followed by another in St. Paul de Vence, France the following year. It is expected such conferences will be held regularly in the years ahead.

Endowed Research

Probably the first recognition of this type research as a definite field of science came with the establishment of the first *endowed* impartial research institute, the Institute Metapsychique. Today there are similar foundations in most major civilized nations, including one in America with headquarters in New York City.

In 1921 the first *University* laboratory for parapsychology research was established at the University of Groningen, The Netherlands¹⁰. Actually, other universities had already accepted endowments for parapsychological studies previous to this date. Stanford University had accepted (in 1912) a very considerable sum of money for the promotion of such studies. Smaller donations for such studies had been accepted by Harvard University and the University of Pennsylvania. But none of these schools had set up laboratories, and none had reported any positive results—with the exception of Harvard. And Groningen's research was not extensive, but did deal thoroughly with one subject who manifested striking telepathic ability ¹¹.

In 1923 Harry Houdini conspired with Dr. Wm. McDougall to bring psychical research to the notice of the universities of America and to secure for it a place among their recognized fields of study. They secured the help of Prof. Carl Murchison, head of the Department of Psychology at Clark University. The result of this conspiracy was a series of lectures by some of the world's leading scholars * which were later printed by the University press and labeled timidly, *The Case For and Against Psychical Belief*¹³.

Duke University

But actually "the modern era in parapsychological experimentation started in 1927 when Dr. J. B. Rhine joined Prof. Wm. McDougall's Psychology Department at Duke University" ¹⁴. Dr. Rhine had started his career by attending a denominational school, purposing to enter the ministry. His own testimony is that the first course in psychology at the institution destroyed his Christian faith: "By the time I had finished the course I had quite a different vocation in mind and the realization that I had no religion left worth preaching to anyone" ¹⁵. Dr. Rhine became convinced that man is a purely *temporal* being and that there is no such thing as "soul" or "spirit" (though today he admits the probability that there is *something* that survives bodily death). Consequently he turned from the field of religion to that of psychology, and did post-doctorate research at Harvard on the subject of "spiritism"—just about the time of the famous exposés of Boston mediums. And though he found no basis for accepting spiritism as a *faith*, he did find information that shaped his plans for his lifetime study.

The occasion of Dr. Rhine's move to Duke is called the beginning of a "new era" because shortly after he and his wife, Dr. Louisa Rhine came to Duke the uni-

* Lecturers were Sir Oliver Lodge, Sir A. Conan Doyle, Frederick Bligh Bond, L. R. G. Crandon, Mary Austin, Margaret Deland, Wm. McDougall, Hans Driesch, W. F. Prince, F. C. S. Schiller, John E. Coover, Gardner Murphy, Joseph Jastrow, and Harry Houdini.

versity set up a separate *Department of Parapsychology* with Dr. Rhine at its head—thus recognizing this as a separate realm of science.

"The publication of the first report (16) from the Duke Laboratory in 1934 brought forth, along with much controversial discussion, a fair amount of *repetition* by other experimenters in America and England. There was such *confirmation* of these repetitions as to establish the occurrence of ESP entirely independently"¹⁷

The ultimate result has been the establishment of departments of parapsychology or lecturers in parapsychology at such widely-separated institutions as University College in Ibadan, Nigeria; The Universities of London, Melbourne, Munich, Utrecht, Rhodes (South Africa), Minnesota, Pittsburgh, Cambridge, Oxford, Harvard, and numerous other institutions of higher learning. In addition to endowments established at the various universities, research in the field of parapsychology is being carried on through grants by such widely varied sources as the Rockefeller Foundation, the Mellon Foundation, and The Office of Naval Research (United States). Symposia in parapsychology are held regularly by such honored learned societies as the Royal Society of Medicine and the Royal Institution of Great Britain. Publications of learned organizations include *The Journal of Parapsychology* and the *Journal of the American Society for Psychical Research* in America, *The Proceedings of the Society for Psychical Research* in England, *The Revue Metapsychique* and *La Tour St. Jacques* in France, plus many others. Popular and scientific books in this field number in the hundreds—eight scholarly books have come from the Duke University staff alone—published in six different languages—plus hundreds of articles in scholarly and popular journals. However, as far as can be ascertained at this time, there is at present *no distinctly Christian group* laboring in this field.

Critical Appraisal

Critical discussion of the findings, and especially the *methods* of university research in parapsychology reached its peak in 1937-38.

First of all, statisticians and mathematicians offered voluminous constructive and destructive comment concerning the conclusions reached. It would take days to go over just a portion of the work done in this field—work developing from criticism that the experimenters take only "gifted" subjects—trying to show that "position effect" curves are simply the "law of averages" catching up—etc. However, because of this widespread controversy a veritable science of statistical mathematics grew up around this research; and such methods of mathematical analysis of findings were developed as to lead Dr. Burton H. Camp, President of the Institute of Mathematical Statistics to declare (in

1937):

Dr. Rhine's investigations have two aspects: experimental and statistical. On the experimental side mathematicians of course have nothing to say. On the statistical side, however, recent mathematical work has established the fact that, assuming the experiments have been properly performed, the statistical analysis is essentially valid. If the Rhine investigation is to be fairly attacked, it must be on other than mathematical grounds (18).

Recently (1956) Dr. Robert McConnell, Professor of Biophysics at the University of Pittsburg and Dr. Alan S. Parkes, Physiologist at the National Institute for Medical Research stated¹⁹ in a report to the Institute of Mathematical Statistics that either our entire science of probability mathematics is defective or parapsychologists have made a major biological discovery. And they went on to add that the first would be a more unbelievable discovery than the second.

Critics took Dr. Camp's hint and proceeded to attack parapsychology on grounds other than statistics—that is, *the experimental set-up*. This led to the almost incredible safeguards against fraud, error, etc. under which the parapsychologist must labor before the results of his research becomes acceptable for publication. By 1938, however, the American Psychological Association had given its approval to the experimental methods of parapsychology, labeling them as "completely satisfactory"²⁰. Since this time sceptics have found it necessary to confine their criticism to individual investigators—with exception of such widely-scattered articles as that by George Price in the August 26, 1955 issue of *Science* in which he for all practical purposes accuses of fraud all those who have reported positive results in ESP research. He wrote:

Not only does ESP challenge current physical theory; there is also no conceivable explanation as to how it operates or could operate—for example, precognition. This situation, the author believes, allows only the alternatives of fraud and error; and since some of the ESP work can be accounted for by no conceivable combination of error, the theory of fraud remains as the only possible explanation²¹.

This attack—seemingly from emotion rather than knowledge—drew defenses from scholars all over the world: so many, in fact, that both *Science*²² and the *Journal of Parapsychology*²³ found it necessary to print a supplement containing these articles. The whole exchange emphasized the fact that the only alternative to acceptance of the *fact* of psi is that all those scientists reporting positive results in psi research are deliberate frauds—which is actually one of the strongest testimonials one could give in support of the psi hypothesis.

Parapsychology is actually so firmly established as a science that the world's leading psychiatrist, C. J. Jung, and reknown physicist, W. Pauli, wrote their monumental work, *The Interpretation of Nature and the Psyche*²⁴ in an effort to integrate the discoveries of parapsychology with the natural sciences by proposing a new philosophy of "synchronicity" which does away

with the historic conception of "cause and effect." (However, to the Christian's mind it sounds suspiciously like a human doctrine of providence which ignores the One Who governs "all His creatures and all their actions").

Likewise Dr. Pascual Jordan, internationally famous German nuclear physicist recently proposed a philosophy which seeks to integrate the discoveries of parapsychology with those of nuclear physics, molding them into a new conception of the universe. He compares the mind with the electron. You can measure the *impulse* or *wavelength* of an electron, but then you can't define its *location*. On the other hand, you can observe the *place* of the electron, but then the *wavelength* or *impulse* becomes totally undefined. He compares this with the conscious mind perceiving a table through what we call "normal perception" and the "psychic" mind perceiving a table through "extrasensory perception." Others may *share* either perception, in either realm, *but neither is explainable in terms of the other*. He emphasizes²⁵ that he considers telepathy and clairvoyance unexplainable by physical means and yet so firmly established that it must be accepted as fact. This statement is almost identical with one made by English physicist Sir Arthur Eddington²⁶.

Periods In the History of Research of Parapsychology

1. *Previous to 1852.* It was during this period that the spontaneous activity of psychic occurrences were simply taken for granted—though some bold souls from time to time ventured to seek more knowledge about the "whys and wherefores" of such phenomena as "hauntings" "hypnotism," etc.

2. *The initial years of the Society for Psychical Research,* when undifferentiated extrasensory perception (telepathy and clairvoyance not distinguished from one another) was the major object of research.

3. Overlapping this period, *the investigations of mediumship* which began with the investigation of Mrs. Piper by William James and later by the Society for Psychical Research, and ran through the eighties, nineties, and on into this century.

4. *The period in which laboratories of academic psychology joined the societies of psychical research* in the investigation of problems of extrasensory perception.

5. *The period, beginning in this decade, in which the science of anthropology is entering the picture* with the investigation of "physical effects seemingly of parapsychical character," mostly in connection with primitive religions and magical rites and practices²⁷.

Summary Of Progress To Date

In his book, *The Reach of the Mind*²⁸, Dr. Rhine summarizes the conclusions that any "open-minded" person *must* draw from evidence uncovered up to 1947. It would seem that this summary would form a con-

venient bridge between our discussion of the *history* of formal, scholarly research in parapsychology and our discussion of technical matters involved in this science.

1. Mind-to-mind interaction (telepathy) occurs without a known physical medium.

2. Mind can enter into a cognitive relation with matter (clairvoyance) without the use of any known sensory-mechanical means.

3. This mental capacity is able to transcend space (has no relation to distance.)

4. It also transcends the time dimension (precognition, retrocognition).

5. The extraphysical system of the mind exerts a significant influence on moving cubes ("psychokinesis") (p. 108).

6. Psychokinesis ("PK"), like other parapsychological faculties, is nonphysical in character (p. 119).

7. Telepathy, clairvoyance, and psychokinesis are so closely related and so unified logically and experimentally that these forms of mind-matter interaction can be regarded as one, single, fundamental, two-way process (p. 130).

8. These faculties are necessarily functions of the whole mind; the integral human mind must participate in PK and ESP just as it does in any other normal mental performance (p. 152).

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Statistical Problems In Extrasensory Perception

R. P. DILWORTH, Ph.D.

Critics of ESP frequently point to the statistical nature of the evidence for ESP in questioning the validity of the experiments. However, if the use of statistical methods, per se, casts doubt upon the validity of the conclusions, then nearly all of experimental science is suspect. For it is clear that even the most carefully designed experimental procedure is subject to some error. If this error is neglected, then exact methods have been used where they do not apply and the conclusions are accordingly approximate; or else the statistical nature of the error is taken into account and the conclusions are stated in statistical terms. Thus the use of statistical techniques in ESP experiments should no more affect the evaluation of the results than in any other area of modern science. Indeed, the fact that they have been used successfully in a wide variety of scientific investigations indicates the necessity for a careful and rigorous use of statistical analysis in the study of ESP.

In a recent article, P. W. Bridgman goes even further and suggests that perhaps all is not right with the fundamental techniques of probability and statistics. He writes:

"It has long been apparent that there is something 'funny' about the probability situation. Probability rigorously applies to no concrete happening—. Yet the phenomena to which the probability calculations justifying ESP are applied are concrete actual happenings, many of them a matter of record in black and white.

"These considerations, I think, make it particularly clear that the locus of chance is in ourselves with strong involvements of 'expectation' and 'surprise', and that there is little that is 'objective' about it.

"The situation covered by the word probability is a desperately complex situation, mostly of our own making and in our own minds with a fragile and fleeting dependence on time and never coherently connected with 'objective' events."

At another point in the article he hints that there

are probably some basic defects in our understanding of probability. It may be appropriate to comment at this point that this is certainly true as far as Mr. Bridgman is concerned, for in a fairly detailed article on probability theory, he not once mentions the concept of a population. Yet this concept is essential for the understanding of probability theory and its applications. Without the notion of population the subject does appear mysterious and the problem of separating the subjective and objective elements becomes difficult indeed.

As a branch of mathematics, probability theory is concerned with a collection of elements over which a probability measure is defined. The collection is called the "population" (or sample space); the elements (or more generally, certain distinguished subcollections) are called "events" and the theory consists of the consequences which can be deduced from the measure axioms. Clearly from this point of view, the theory of probability rests on the same foundations as any other branch of mathematics. Now when this probability model is applied there must be a population of concrete events which corresponds to the abstract population in such a way that the probability of the abstract event represents the relative frequency of occurrence of the concrete event. The accuracy of this representation will determine the extent to which the model can be used with confidence in the study of the concrete situation. Indeed, there may be varying opinions among individuals concerning the reliability of a given model. This is always the situation in any area of applied mathematics. A mathematical formulation is an idealization of the concrete situation and though the mathematical work is entirely correct, the validity of the application may be a matter of opinion. Furthermore, just as a highly idealized mathematical analysis may be most useful in understanding the given physical process, so even a rough probability model may be very helpful in understanding a physical process in which chance effects occur. Now in the physical sciences,

a mathematical model is checked by making theoretical studies and comparing the results with experiment. This comparison will involve the use of probability since experimental procedures are subject to error. The laws of probability have been checked in countless concrete instances in exactly the same way. The overwhelming consistency of these many tests constitute the most impressive evidence for the applicability of probabilistic methods. It is true that probability itself is used in making the experimental verification of the theory. However, if only the broad, general, outline of the theory is assumed to apply, it still suffices for exceedingly precise verification of the laws of probability.

Since the applications of probability have been so thoroughly tested, it would seem unlikely that the subject would be plagued with paradoxes and problems, yet this is indeed the case, as Bridgman's article indicates. Occasionally the difficulty is simply a misuse of the laws of probability, but the usual source of confusion is the misidentification of the population. It is a common misconception that probability is in some sense a number which is once and for all attached to an event and is moreover independent of other events. But as pointed out above, before probability can even be defined, the collection of events which make up the population must be specified and probability is then defined relative to this population. Now in some cases, the population in which the event occurs may not be particularly significant; thus if the population is the collection of possible tosses of a given coin, it does not make much difference which particular coin is used since all common coins have heads on one side and tails on the other. Thus a model which assigns equal probabilities of one-half to the two events is a satisfactory representation of the coin tossing experiment. On the other hand, if the coin was part of a magician's equipment, then the model might no longer be applicable. As another example consider Russell's license plate problem, which is mentioned by Bridgman. If before starting for work I ask what is the probability that the first license plate which I observe will be RGL 749, then the appropriate population is the observation of the various license plates in the city. These events will not be equally probable since I shall be much less likely to first observe a license plate on a car locked in a garage than a license plate on a taxi cruising the streets of the city. However, if there are a great many automobiles in the city, the probability of observing the particular license plate RGL 749, will be exceedingly small. If I then set out to work and the first license plate which I observe is indeed RGL749, then I have every right to be surprised for, in fact, an unusual event has occurred. However, if without specifying a particular license plate, I set out to work and observe the first license plate to be RGL 749, then I

have no right to judge that an unusual event has taken place, since now the appropriate population consists of one event and is the event of first observing RGL 749. Its probability is indeed one. If one still wishes the population to consist of all license plates in the city, then a new probability measure must be assigned, namely, RGL 749 with probability one and all other license plates with probability zero. Clearly there is no mystery if the populations are carefully distinguished.

Let us consider one further example. Player A deals five cards from a shuffled pack of playing cards to Player B who has the privilege of looking at his cards. Now if A draws a card at random from the cards remaining in the deck, let us suppose that the players are interested in determining the probability that the card will be the ace of spades. Note that the situation is different for the two players. For Player A the appropriate population is the set of all distributions of five cards to an opponent and then the selection of a card for himself. Since the elementary events are equally likely, this is equivalent to the selection by A of a card at random from the entire deck. Hence for A the probability that the card drawn is an ace of spades is $1/52$. Now what is the appropriate population for Player B? He has a specific set of five cards in his hand; hence the appropriate population for him is the set of selections of a card from a deck with the specific five cards removed. If he holds the ace of spades, the probability that A will draw that particular card is thus zero; if he does not hold the ace of spades, then the probability is $1/47$.

This example shows clearly that there is not an absolute probability associated with an event, but that the probability depends upon the population under consideration. Since in the example the choice of the population for the second player is dependent upon his knowledge, this would seem to support Bridgman's contention that probability is highly subjective in character. Insofar as subjective elements may affect the choice of the population, this is indeed the case. Furthermore, this subjective element may enter in any area of experimental science. For example, if an investigator is studying the motion of a particle in a gravitational field and is unaware that the particle is charged and that an electromagnetic field is present, the mathematical model which he uses will lead to incorrect results. On the other hand, another scientist, aware of additional factor, will choose another model and will interpret the behavior of the particle correctly. Note that if the two researchers had shared their knowledge, they would likely have chosen the same model. It is in this sense that the use of mathematics in scientific pursuits is "objective." Likewise two statisticians who share the same information concerning a chance

event will generally agree on the choice of the probability model to represent the phenomena. Hence the application of probability is just as "objective" as the applications of mathematics in any domain of science.

Finally let us consider the specific implications of these considerations for ESP. Clearly the evidence for ESP must be statistical in nature, for even if a subject were able to guess cards with complete accuracy, the number of correct guesses necessary for significance would be obtained by comparison with random guessing. But, as we have seen, in order to apply a probabilistic model, a population must be specified. Now a desirable population would be a collection of a large number of guesses from a given subject at a given time. But this is impossible since the experimental procedure takes time. Such a model might still be applicable if it can be assumed that the responses of the subject are independent of time. However, this point of view presents difficulties, since it is readily acknowledged in ESP work that the "ability" of subjects vary greatly from day to day. An alternative model would be a population of guesses by a given subject over a specified period of time. Note that if such a model is adopted then the experimental procedure must be adopted to the model. Thus it would be inappropriate, for example, to stop the experiments whenever the subject felt that he was losing his "ability." An alternative model which allows for such "optional stopping" can be devised. However, the probability calculations will be different from those of the previous model.

In interpreting the results of a series of experiments

by means of a given probability model, it is highly important that all of the results be included in the analysis. This means that unfavorable series must be given the same consideration as the favorable series. It is not enough for the investigator to decide that the subject had an "off-day" and to discard the data on this basis, for by a little judicious selection, a purely random series can be made to appear significant. In this connection it should be pointed out that the practice of throwing out unfavorable data occurs occasionally in nearly every field of scientific research. If the procedure cannot be justified upon sound statistical grounds, the practice is always to be deplored. This is particularly true in the case of ESP where the question at issue is so highly controversial.

In conclusion it should be observed that one of the fundamental features of the scientific method is the mutual checking of experimental work by several investigators. The ability of another research worker to reproduce a given piece of work is an important consideration in determining its validity. Thus the investigation of ESP poses particular problems in this regard, since psychic ability, if it exists, is conceded to be transient and variable. Nevertheless, in order to have the status of scientific fact, the criterion of reproducibility must be satisfied. On the other hand, it must be acknowledged that if an ESP phenomena is produced which can be checked to be significant by any competent investigator wishing to duplicate the experiment, then in spite of the magicians, conjurers, and crackpots, the phenomena will have been established just as surely as any other portion of our scientific knowledge.

Extrasensory Perception

PHILIP B. MARQUART, M.D.

As I type this manuscript there is something strange occurring, which I do not understand. How is it that the thoughts in my mind may be enacted into physical energy and cause material changes to occur in this erstwhile blank piece of paper? How do I make my fingers move as I type? Frankly, I do not know. It is remarkable that a mere thought leads to a totally coordinated effect in the cells, muscles, atoms and molecules. I do not even have to know the muscles and tendons which go into action as I type. Indeedd—(There, don't you see. The moment I began to analyse how I type, these errors begin to creep in.) This is one of the mysterious things that are related to the so-called psi phenomena, of which extrasensory perception is one example. This is an example of "mind over matter" which cannot be denied. Those who do research in psi, refer to this as psychokinesis, the ability of the human mind to bring about changes in the material world. We might question whether a mere wish of a worldly gambler could change the arrangement of dice in his game. We do, however have power over the muscles of our body. Is man perhaps a "transformer" used to "step down" psychic force to a state of physical energy?

For more than twenty-five years, we have been hearing reports about the "psychic research" coming from the Psychological Laboratories of Duke University.* Are these experimental data acceptable scripturally? Some tell me that I should not investigate such matters, because they are "of the devil". Should we dare to say such a thing about anyones activities unless we were sure of it? The Authority to which to appeal is the Word of God. Are these then Satanic activities that are being investigated? If it is a natural function, as Dr. J. Rhine claims that it is, then it is a part of God's created universe and thus cannot be Satanic, but could be used by Satan.

Are the experimental data from Duke University a revelation? If so, why do all human beings seem to be endowed with them? Again, if be revelation, where is the rightful place of Scriptures in relation to it? This study is made for the purpose of presenting problems that arise for the Christian in these matters of extrasensory perception and related functions. Any implied solutions and conclusions are only tentatively presented.

Perhaps a few scriptural considerations are confirmed by this research. We recognize that the Bible needs no confirmation from science in order to validate

it. Rather, the truth of science is confirmed by its coincidence with Biblical Truth.

Orientation

Real facts are sure to be consistent with Scripture, because God is still in charge of His created universe. If scientific data are not thus consistent, they are not true. We are here dealing only with the *facts* of this research data. The statistics must be validated elsewhere. Our position, is not in any of the several psychologies of the world, but a scripturally based psychology. Any facts added thereto by science must be consistent with the Word. "If it is not according to this Word, it is because there is no Light in them" (Isa. 8:20)

The research done at Duke University has been done on a bias of liberal theology. Dr. Rhine was once a candidate for the liberal Christian pulpit. His conflict has always been against materialism in psychology, which would explain all human nature on a physical basis. We may concur in Rhine's stand.

Hower, Dr. Rhine is a vitalist. He explains vitalism, as "the hypothesis of a special non-physical life force". (p. 168) The Christian position is sometimes called vitalism, but it is a more specific form of it, namely that this "life force" was implanted by the Creator and is maintained by the mediate supervision over all nature by His Spirit. The non-scriptural vitalist tends to identify the life with a god, and thus he tends to worship the inner self, in what is known as a pantheism.

Rhine says that his findings reveal a basis for a concept of "extra-physical energy". That there is such extra-physical energy, we need not doubt, for "power belongeth to God" (Ps. 62:11) and "the Gospel of Christ is the power of God". (Rom. 1:16) However, Rhine is not speaking of the power of God, but rather an extraphysical energy as an integral part of our own natural constitutions. In this, we are willing to become convinced.

We also recognize the same distinction between body and soul as Rhine postulates in his "mind-body problem," recognizing here a distinction without making it a hard and fast dualism. How else can we believe the intermediate state, when we go to be with the Lord, while our bodies shall rest in the grave, if the Lord tarry. For all practical purposes, our present make-up is soul and body. However there is a third part, now not functional, the human spirit. The spirit is like an unlighted candle (Prov. 20:27), a dried up fountain, a collapsed uppermost story of a three story house, until regeneration.

Rhine hints at a inner core of personality, which we recognize as the inner self, or the Biblical "heart". However, he does not make this definite enough to constitute a true nuclear doctrine of human nature. He does not even mention the image of God in man. This image was spoiled when Adam sinned, so that the light we now have is largely soulual, depending upon physical, physiological, sense perception and mental functions. One function was deleted by the Fall: the capacity to perceive God. However, our total depravity is largely a depletion rather than a deletion of human functions. Could it be that Rhine is investigating the remnants of certain activities which were strong before the Fall? The unregenerate spirit is dead in trespasses and sins (Eph. 2: 1). While he does not so state, Rhine's interpretation of his research data may imply the false doctrine of the innate goodness of man. Sin and guilt and the Fall are not mentioned. However, if his data are facts universally found in human nature, we may still accept them as natural functions of the soul.

We may highly approve Rhine's attempt to bring the function of the will back into psychology, which has for the past generation been deleted from its pages. Even the Calvinist is not a determinist, as are most modern psychologists. A limited free will as the determiner of behavior is implied in the Word, regardless of environmental influences.

Agreeing with modern psychology, Rhine recognizes that human personality has an unconscious part. We must re-echo: "Who can know it?" (Jer. 17: 9) E. S. P. is said to be an unconscious function. E. S. P., consciousness and unconscious phenomena, however, are all manifestations of that deep inner self which we are. Many make the mistake of considering mere subjective experience as identical with the inner self, but the subjectivity is but an expression of the inner person. The rich man in hell was really in perdition. Subjective distress was only a part of it.

Duke University research decries the materialistic attempt to foist a uniformity of physical law upon human nature. Yet they seem to be willing to set up a uniformity of non-physical law upon our personalities in such a way as to constitute a *legal determinism* upon persons and they blandly infer that God can no longer perform miracles. Does this imply that God does not now answer prayer? However, Rhine says that prayers are really answered, not by ESP, but perhaps there is a higher Power. However, he hastily corrects himself by asserting that this higher power is not yet proved by the scientific method. Then is science more valid than the Word of God?

The Research Data

Parapsychology is that area of psychology which deals with the subject matter of the Duke experiment and also such matters as the survival of consciousness

after death etc. The function of the personality with which parapsychology deals is known as the Psi function. The various phenomena are classified thus:

1. Extrasensory Preception (ESP) dealing with incoming data of several varieties:

Telepathy: mind to mind.

Clairvoyance: object to mind.

Pre-cognition: knowing ahead of time.

It is possible that these three may all be the same, or that all may be explained by one of them. ESP is tested by a special pack of cards (five cards of each of five designs, twenty-five in all). If your score is over five in guessing these designs, it is statistically significant.

2. Psychokinesis (PK) is the outgoing effects of the mind upon matter. Dice, thrown by mechanical means are used here. There has been some attempt to explain PK in terms of ESP and vice versa.

3. Animal psi is known as *Anpsi*. It deals with so-called sixth sense, homing and migration. Of course, Rhine follows evolutionary considerations but that need not disturb us. The fact that we are like animals proves nothing about our origin.

4. Psi-missing, which is failure to guess correctly, is now found to operate on a principle. If one wrongly guesses the card just before or just after, it is called *displacement*. Such cases have plenty of psi, but is working in the negative.

5. Spontaneous psi is a mysterious, non-laboratory brand of psi which is often so specific and so practically useful that it is seen as very different from that laboratory brand.

Psi is an unconscious, natural function, varying from person to person, and at various times. It is unpredictable and uncontrollable. It cannot be practically used and it is considered as a primitive activity deep within the personality. It is affected by fatigue, attitudes and by drugs. When Rhine sought to find an example of outstanding ESP, he cast aside Duninger, because he has been caught faking, but finally selected an African witch doctor, whose uncanny precision of ESP, was indeed amazing.

If these data from Duke are facts then we can view them as natural facts. As we already know, memory, reason, insight, will and conscience: all these have extra-sensory features and perhaps extra-physical ones. A thought can raise a fist. If so, then why quibble? Our God-given life force may also do other things without relation to time, space and mass, for we are fearfully and wonderfully made. (Ps. 139:14)

However, the African witch doctor is not an example of a *naturally* functional psi. He used this psi function in a practical and specific manner which seemed miraculous. It reminds us that there may be Satanic possibilities of psi, if and when a man gives over his

personality to the forces of evil.

We know that psi is not ordinarily controllable or practical and cannot ordinarily be used for our warning or protection or for the purpose of "wire-tapping" on our hapless neighbors. Most people do not even know when their scores are good on the ESP cards. We can see that "pre cognition" is certainly not prophecy in the Biblical sense, and that it need not give us pause from a scriptural standpoint. In its natural form, it does not predict the course of a life, or of a nation. God is the only one Who "declared the former things from the beginning". (Isa. 48:3) or "declared it to thee before it came to pass", (Isa. 48:5. The Word of God does not need to deny this bungling pre-cognition, which can predict nothing except the serial order of cards.

On the other hand it is interesting to find that there may be a deep inner non-physical activity, which either God or Satan might control in order to produce miracles or signs. Since psi is found in all men, we cannot view it as a process of the human spirit, for that spirit is dead in most men, unless it be sleepily turning in its grave. This brings us to a new kind of extrasensory perception already known for 2,000 years. Rhine's psi, in the form of psychokinesis, is an emaciated counter-part of God's power of prayer. Have you noticed the Scripture passages which tell of things perceived by children of God only, without the functioning of the sense organs of the body? If you make a study of these passages, you will be astounded to learn that revelation and illumination come to the children of God without sense perception.

The context of such a passage will tell you whether it is the sense organs of the body or the corresponding function in inner self, by which we may learn things without sense perception. Here is one where both kinds of perception are described. "Faith cometh by hearing and hearing by the Word of God". (Rom. 10:17). This is how Salvation begins. You hear the Gospel through the ears of the body and of the heart. You may hear the Gospel through the ears alone and not be saved, but when these inner perceptions begin, then we know that regeneration has taken place, otherwise there would still be no life in the inner spirit. When our ears are opened, then we have the God-given faith of Salvation. In fact, these inner perceptions cannot function at all until God enlightens them through hearing. Then you may turn your gaze and "Look unto Me all ye ends of the earth and be ye saved" (Isa. 45:22). The proper activity of a child of God is "Looking unto Jesus" (Heb. 12:2). If we lift up our faces to Him, we can praise Him even in the presence of our enemies. (Ps. 27:6). However, we tend to gaze on anything on the horizontal plane until we learn that He is the lifter up of our heads.

(Ps. 3:3.) All the latter passages above are dealing with this inner perception which is without sense organs. On the other hand, we have no difficulty deciding what eyes are meant when Peter said to the beggar; "Look on us." (Acts 3:4) Further confirmation that there is an inner set of perceptions in addition to those of our sense organs is found in the Williams translation of Eph. 1:19, which speaks of the "eyes of the heart". It could have been "eyes of the spirit" for indeed, it is both.

What does all this mean? It means that God's Word recognizes a deep inner part of the child of God which can catch perceptions without senses, through the Word, or otherwise. It is an extra-sensory perception of His revelation to His own. Who knows? Perhaps it is through the medium of what Rhine calls "Psi"?

Discussion

Rhine gives many instances of what he calls *spontaneous psi* in which people learn hidden things in times of emergency or are warned of impending danger. Many of these instances were in people of rather doubtful Salvation. However, there were many instances of such life-saving impressions in the life of that great Christian leader, R. E. Neighbor. It is unthinkable that these experiences could have come through any source except the Hand of God. A. W. Bailey, about to be bitten by a poisonous snake in Africa, was saved through the prayer of a woman in Maine, who did not know for months why she was led to pray for him.†

†Personal communication.

However, such spontaneous knowledge may also be the lying wonders of the enemy. If these illuminations are not consistent with Bible Truth, they are lying wonders. The Christian need not fear this enemy. No one who is born again could wilfully give himself over to Satanic influence, although he might sometimes be influenced by it.

Some have read "He understandeth our thought afar off." (Ps. 139:2) and they have asked: "Does God have ESP?" The answer is, "No." He has omniscience. Again one may ask, "Does God have PK" when we read: "He uttereth His Voice; the earth melted". (Ps. 36:6). This is His Omnipotence.

Rhine says (p. 227) that the data of science constitute a revelation. We would recognize that they are part of His common Revelation in nature, yet he apparently does not recognize any special revelation: the Word of God.

On page 219, he indicates that scientific inquiry into man's spiritual nature can add to the knowledge learned by the *old* methods. The old methods he explains as "unusual experiences." I suppose these unusual experience are supposed to include original revelation of the Word, but he does not say so. We recognize the Word as the only valid Authority and that scientific

data, if true *Facts*, may only be an adjunct in any explanation of man's spiritual nature. Incidentally, Rhine explains the human spirit as "esprit de corps". That only.

On p. 231, we find it said that revelational religion will not counter the claims of Communism. Little does

he realize that revelational religion of Christ has the only answer for Communism, and that his own liberal views are often held by those who uphold a radical viewpoint. God will take care of Communism in His own due time. It will not be accomplished by the efforts of man. May God be true and every man a liar!

A Word of Caution

J. OLIVER BUSWELL, Jr., Ph.D.

The term "extrasensory perception" refers to a supposed capacity of the human mind to receive intelligible impressions from other human minds, or from physical objects, independently of all physical or physiological senses. In voicing my skepticism on the subject I must confess first of all to an emotional prejudice. The fact is that I have a strong dislike for conclusions not based upon sensible data, data open to public investigation. A large part of the educative process by which minds are matured consists in training the student to go behind his mere intuitions and set forth his tangible data.

My prejudice is partly based upon the fact that in my own personal experience I seem to have an extremely active imagination with remarkably vivid mental images. I believe that most people whose minds are active are constantly thinking of possibilities and contingencies, with more or less vivid mental images. Without analyzing their processes, they remember the visions which later correspond to fact, and they forget all the others. All my life I have had to curb strictly, and hold in check, my mental impressions and images. This doubtless makes me skeptical about the alleged telepathic experiences of others.

Futhermore, I have had much to do with young people who are inclined to ascribe their visions and impressions to the work of the Holy Spirit. In most cases a Christian who desires to do the will of God and who follows impulses which could possibly be ascribed to the Holy Spirit, is very likely to do something profitable and good, but many of us have learned by sad experience that absurd or even harmful things may be done by very sincere, devout Christians, mistakenly following impressionable impulses.

Having confessed my prejudice, I feel justified in calling attention to a tendency against which I believe a warning ought to be sounded. There is in the human mind a love of the mysterious and the occult. This tendency is by no means eliminated from the most highly trained, scientific, technical minds. In fact, there almost seems to be an impulse to compensate for precise technical reasoning by a plunge into the mys-

tical or even the irrational when one is off-duty from his professional field. There are rather prominent physicists who have been prominent in spiritism or necromancy.

Witness also the tendency on the part of many devout Christians to exaggerate or slightly distort the supernatural in the name of promoting Christian faith. Benjamin Warfield's great book *Counterfeit Miracles* should be required reading for any who are inclined to think they are glorifying the Lord by stretching the truth.

I feel convinced that the love of the occult and the impulse toward the mysterious is in large part responsible for the credulity of Christian people toward extrasensory perception.

I have another confession to make: In a review of Rhine's *Reach of the Mind* some years ago I made a rather serious statistical blunder. I do not have available my notes with which to make detailed correction. I can make the correction in principle, however, with the following general statement: Rhine's statistical methods of recording results with his cards of five different patterns is not unsound in principle. If he had presented a far larger mass of data, the result would have been of greater value. I was definitely in error in arguing that the method was basically fallacious, and my illustration of random drops of water in a partially covered circle was wrongly conceived.

However, I do insist that breaking up the data into scores of twenty-five items each, introduced an artificial situation which greatly reduced the significance of the results. Rhine's method opened the possibility for a few erratic scores to throw his averages out of line. If he had simply kept the total score of each individual subject running through two or three hundred cards each, and if these total scores had averaged considerably more than 20% correct, the results would have been far more significant than they were. As it was, Rhine had, according to his own account, a few high scores which might have been due to factors not recognized by the experimenter, in my skeptical opinion, and these were sufficient to throw his averages

somewhat out of line.

In any experimental process the problem of the analysis of results must be carefully considered. If the results can reasonably be accounted for by factors not acknowledged by the experimenter, the value of these results is diminished or eliminated. In my own personal experience I have satisfied myself, and some others, in a great many cases, that the alleged results ascribed to extrasensory perception are actually accounted for by other factors. The process is discouraging, however, for every marvelous event adequately accounted for is immediately replaced by a score of others alleged to be equally marvelous and, this time, certainly pointing to the mysterious force in which both educated and uneducated minds love to believe. Browning's fascinating poem on *The Magician* should be read in this connection. The critic is simply snowed under by the volume of alleged data.

May I conclude with a few remarks on the Scriptural data which I believe to be related to this subject. First as to the nature of man, the Bible teaches that man's material being, his body, is separable from his non-material being and that at death (which is, according to the Bible, so far as the human race is concerned, the result of sin) his non-material being is separated from his material being, and so remains, awaiting the resurrection. As long as man is in the body there is an obvious but mysterious interaction between his non-material and his material being. The theological and philosophical aspects of the mind-body problem have not changed with the modern advancement of neurology and psychology. The mystery and also the obviousness, of the inter-action between the material and the non-material remain the same.

As for the nature of God, the Bible teaches that prior to the incarnation of Christ the three Persons of the Trinity were non-material, spiritual, personal Deity. In the incarnation, the second Person of the Trinity took to Himself a human body, by the miracle of the virgin birth. At His resurrection the body of

Christ, without changing in its numerical identity, was glorified. At the ascension the glorified body of Christ was withdrawn from this world. In the present age our communion with Him is non-material, as with the Father and the Spirit.

The Scriptures make it perfectly clear that the Triune God is capable of communicating with the non-material being of man apart from his physical, physiological senses. When the Apostle Paul was caught up to Paradise (II Cor. 12:1-10) he did not know whether or not his non-material being left his body, "whether in the body or apart from the body, I know not; God knoweth." In this experience he heard words and received exceeding great revelations. Christ promised that the Holy Spirit would teach and remind Christian people, and guide the church, and the context seems to indicate that the Holy Spirit acts directly upon human minds apart from sensory perception. Many of the experiences of the prophets were evidently given apart from their physiological senses.

It must be said, therefore, that there is no *a priori* reason for Christian people to be skeptical of extra sensory perception as such. The question is a question of fact and evidence. If extrasensory perception should be proved beyond any reasonable doubt by thoroughly convincing evidence, (which, in my opinion, is not the case up to the present time) no Christian doctrine would be modified. My objections, therefore, are not based upon *a priori* considerations.

I simply believe that Christian people should be extremely cautious, and guard against the falsely mysterious. I believe that Isaiah's warning against necromancy applies by analogy to this problem: "And when they shall say unto you, seek unto them that have familiar spirits and unto wizards that chirp and mutter; should not a people seek unto their God? On behalf of the living should they seek unto the dead? To the law and to the testimony! If they speak not according to this word surely there is no morning for them." (Isa. 8:19-20, Revised Version of 1901).

ARCHAEOLOGY

Allan A. MacRae, Ph.D.

Recent developments in Biblical archaeology can be generally divided into two categories: those which relate to written material and those which relate to material objects and excavation of buildings, walls, statuettes, etc.

Just at present particular interest attaches to the study of written material. While until recently there has been comparatively little written material discovered from Palestine, the great discovery of the Dead Sea Scrolls has tremendously increased our knowledge in this field. At the same time these are quite different from the inscriptions which are found in Egypt and Mesopotamia, because hardly any of them relate to contemporary events. Most of the Dead Sea documents are copies of documents written long before, or of rather cryptic rules of a peculiar sect. Consequently, while they are of great interest for many different reasons, they do not throw as much light on contemporary history as do the inscriptions from Mesopotamia and from Egypt.

In Mesopotamia, interest is at the moment not so much concerned with the discovery of new inscriptions, as with an improved tool for the understanding of those already available to us. This consists of the Assyrian Dictionary, the first volume of which has recently been published by the Oriental Institute of the University of Chicago. It is to be a very extensive work involving a score of volumes. This first volume published does not contain words beginning with "A", but with one of the simpler letters near the middle of the alphabet. The dictionary aims to cover all of the available material in the Akkadian language (also known as Assyrian or Babylonian). Since many thousands of tablets have been unearthed, such completeness is impossible of realization, but the dictionary will cover many times as great an amount of material as any previously published dictionary of Assyrian.

Students of the language and culture of ancient Mesopotamia have been at a great disadvantage through the lack of a satisfactory dictionary. Reliance has had to be placed very largely on dictionaries that were already extremely old, and some of them had very serious defects. Work on this Assyrian dictionary was begun many years ago, and included an attempt to put all the words in the extant material from ancient Mesopotamia on large cards, with a very considerable amount of context on each card, and then to arrange these cards alphabetically and to study them in preparation for the making of the dictionary.

During a span of several decades the dictionary has had a large number of successive directors and these have varied greatly in their ideas as to how the work

should be done. Such a simple matter as the arrangement of the words constitutes a real problem in dealing with a language like that of ancient Babylonia. The language is closely related to Hebrew, so it seems rather natural to arrange the words in the order of the Hebrew alphabet. Yet some of the Hebrew letters are missing and others have fallen together. Furthermore, the effect of ancient Sumerian (a non-Semitic language) upon the writing of the Babylonian, and also the great number of Sumerian loan words which have been taken over, deprive the Semitic alphabet of much of its meaning. It has seemed to many that arrangement strictly in the order of the English alphabet would be more helpful.

Perhaps the most sensible suggestion ever made was to arrange the material entirely in an artificial scientific alphabet such as is used for the study of Egyptian hieroglyphics. This would put similar letters together, instead of having them widely scattered in the alphabet, as they are in English, and would be a tremendous help to the person who is looking for a new or unknown word.

It is not nearly so important, however, that the best possible system of alphabetization be used as that a definite one be settled upon—because this relates not merely to the division of the words according to their first consonant, but also to the matter of the second consonant and the third. In fact, it is particularly here that a really scientific arrangement of letters would be of most help to the student. Yet once the system of alphabetization has been selected, to change it radically would involve many hours of difficult work in re-arranging all the words in the system, not merely the main heads.

This is just an example of the various types of difficulties that faced the students as they worked over the Assyrian Dictionary through the years. Assyriologists who could study directly at the Oriental Institute of Chicago, with access to the cards themselves, had a tremendous advantage over those who had to be dependent on the various lexical helps that were available elsewhere. The first volume of the dictionary is only a beginning, but it is a harbinger of good things to come, and all students of ancient civilization are deeply grateful to the Oriental Institute for bringing this project thus far on its way.

In Egypt also the greater part of the work done last year was in the field of the study of language. Epigraphers of the Oriental Institute have been busy copying inscriptions. Part of their time has been spent in copying inscriptions from monuments that may sometime be covered by the waters of the projected Aswan Dam. The preservation of this material is of great importance for our knowledge of ancient history and it is vital that it be preserved. Another part of the time of the expedition was spent in copying historical in-

scriptions from Rameses III at the Temple of Luxor. For the Bible student, the study of anything throwing light on the period of Rameses III is of great importance, because it is in connection with him that we learn much about the coming of the ancient Philistines, who play so great a part in the Bible. It would seem that a large group of sea-peoples, of whom the Philistines were one of the most important components, made an attack upon Egypt by land and by sea and were repulsed by Rameses III, the last of the great native Egyptian warrior rulers. Being repulsed from Egypt, they settled in Palestine, and thus the small but very important Philistine element in Israelite history came into being.

Our knowledge of the Philistines has been very scanty in the past because of the lack of extensive excavation of Philistine cities from the period of their occupation. Some of these mounds were greatly damaged in later periods. Others are covered with much vital material from later ages, which would have to be carefully worked through before it would be possible to get down to the Philistine level. Therefore anything that can be learned from Egyptian monuments about the Philistines assumes an especially great importance to the Bible student.

Philadelphia 17, Pa.

May 7, 1957

PSYCHOLOGY

P. D. Marquart, M.D.

Nervous Christians, by L. Gilbert Little, M. D. (Moody Press, Chicago, 1956.) is a new departure in psychiatric literature. Other works have been attempted by others, in a Christian vein, but none has been so utterly true to the Word. This small volume, written by a practicing psychiatrist in Kansas, proves that a Biblical psychiatry must be totally different from that of the world. Psycho-surgery, shock, sedatives, tranquilizers, common sense psychotherapy have their place in psychiatry, but they are shown to be mere palliatives, which merely treat symptoms. As for "depth therapy," it is too superficial to get down to the core of human nature and thus effect permanent results.

The author reveals human personality as the Bible portrays it, not merely an *id* and an *ego* principles. In the depths of the man is a genuine entity which you are, the inner man, the inner self, or to use the Biblical term, "the heart." The heart is not readily discerned since the Biblical question is: Who can know it? (Jer. 17: 9). the mind is a superficial layer consisting of the various mental activities, which are the "issues of life" and which proceed out from the heart, as its

expression. For instance, he says that all functional symptoms are generated in the heart.

Dr. Little finds a spiritual problem at the root of most Christian maladjustments (not necessarily guilt, but a spiritual problem nonetheless). To be sure some problems are based upon organic or biological disorders or the press of circumstance. Nay, these are not the cause either, but merely the straw that broke the camel's back. Otherwise however, he searches for the error in following New Testament instructions to Christians. The neurotic may be laboring too hard in his own strength, or centering upon the self, or entertaining anxiety, or neglecting devotions. Frequently the Christian is himself doing something pagan; trying to atone by himself for some little thing that has crept into his Christian life. Needless to say, this is wrong, pagan and very displeasing to the Lord. We can do nothing, before God, to fix up a sin once done. Whatever is wrong, Christ has an answer for it in the overall treatment of the disorder.

The author daringly asserts the reality of Satan and of his demoniac angels and he shows how they can influence Christians by using the little foxes which spoil the fruit of the Spirit.

The last chapter of the book is authored by Theodore Epp and it deals with the armor of the Christian in standing, therefore, against the wiles of the devil.

What Is Your Life?

(James 4: 14.)

This Biblical question needs an answer that is neither naturalistic, materialistic or mechanistic. Life itself is so complicated that no one has ever been able to analyze it completely. Not only is biologic life more than a mere agglomeration of inorganic mechanisms, but its human expression in that vague and intangible thing which we call personality is still more mystifying to us.

Speaking of personality, do you not think that the fact of personal beings is so pervading in our universe and life view. Now we must admit that the personalists of the past have not been as Biblical as they could have been, and neither was the Psychologist Stern, who originally contributed the concept of a Personalism (as well as the concept of the I.Q.) For the most part, we have forgotten the monumental work of Bowne* who made a sincere attempt to conform his view of personalism to the Scriptural considerations.

It would seem that our present day Christianity is in need of a more personal view of things as they are. They do not need more religion; they need Christ; not more devotion; they need Him. On the one hand, those scientists who do take a Christian creed unto themselves, tend to think of Him as a first Cause, a Force, an Energy etc., not a living, warm personality, who loves

*Bowne, *Personality*, 1908, Houghton Mifflin, Cambridge

you. To many of them, He is just a Law by which things happen, who set things going and now he is forgetting about the whole matter and leaving it to care for itself. This view is a kind of new deism. On the other hand, the religionists of our day tend to take an opposite error. Instead of overemphasizing His transcendence in deism, they tend to take a liberal, idealistic and pantheistic view of things. God is immanent in His universe, they say, in part. He is His universe. The Personalistic views lie between these two extremes. While it may be called a form of Christian Idealism, it is a very special kind, for Idealism is almost never Christian or Biblical.

To the Personalist (Like Bowne), reality consists essentially of finite persons and an infinite Person. Who is recognized as Creator and sustainer. All of the objective environment is secondary to persons and for the express purpose and utility to persons.

Wheaton, Illinois
May 1, 1957

SOCIOLOGY

Frank E. Houser, M.A.

One of the readers of this column recently wrote to me indicating an interest in sociology and socialism. Since these two subjects have had a sporadic relationship it might be interesting for us to chat a bit on the topic. Two questions could be asked: A. Is sociology socialistic? B. Are sociologists socialists?

Most modern textbooks on the principles of sociology disavow any identity between sociology and socialism. Sociology is a study of social relationships carried out with scientific pretensions. In other words, the sociologist submits himself to the canons of science as much as he is able. This includes being as value-free in his actual research as is possible. While there are varieties of socialists, the core idea concerns an economic creed and political movement which believes our ills to be the result of economic causes only to be remedied by government control of the major means of production. It has shed its objectivity in the quest to bring in the kind of society it thinks ought to exist. Furthermore, its range of interests is much narrower than sociology. Sociology runs the gamut of social relationships. Socialism focusses on the political-economic system.

However, it cannot be denied that some sociologists have been and are socialists. And, it can't be denied that some social theories have been socialistic. Sociology has, of course, had its share of conservatives. It's pretty

hard for any man to remain in the straight jacket of scientific objectivity for long. Outside the laboratory—and, even inside—he may make all sorts of value judgements from the data that linger in his mind. In fact, he has as readily become an “individualistic, laissez-faire, reactionary” as a flaming revolutionary. Remember that Herbert Spencer was the darling of American business interests because his study of society led him to proclaim freedom from government interference. Of course, Spencer's beliefs stemmed from his evolutionary ideas as to the growth and “progress” of society. All this was “sociology” for Spencer.

The early students of society varied in their ability to keep their objectivity. Comte, Spencer, and Karl Marx showed varying amounts of objectivity—which makes reading them for fact and fancy a demanding exercise. As the study of society became more professional there comes more awareness of the need to approximate the scientific desideratum of objectivity. For that reason it is fairly common today for a sociologist to reveal his biases when publishing a study of any social relationships involving conflicting value orientations. Gunnar Myrdal revealed his beliefs on race in the beginning of his monumental work on the Negro. Seymour Lipset tells his political convictions at the outset of his book on socialism among Canadian farmers. Thus, the aim of contemporary sociology as a funded body of reliable knowledge is to be as free from bias in any direction as it can be.

This still leaves the second question unanswered. Frankly, I don't know what percentage of the members of the American Sociological Society are socialist. If voting Republican is considered a sure sign they aren't socialist, then I suspect they are at least a sizeable minority. However, there are plenty of right wing Republicans who would never agree on that definition of a non-socialist. If the slightest bit of government control over our economic life is considered socialistic, then there are very few non-socialists anywhere.

Of more interest to me are the currents in modern sociology which have to do with the questions of power, mass society, political apathy, and so on. Here, I believe, you will find some very interesting conclusions being drawn which affect a man's political beliefs. Take, for example, the influential work of David Riesman, *The Lonely Crowd*. His depiction of a trend to conformity in our society has hardly led to exaltation of “groupism.” His sequel, *Individualism Reconsidered*, is a series of essays lauding the autonomous man. If socialism has any connotation of welfare for all at the expense of the individual it will get little comfort here. And, on questions of power there seem to be a large number of respectable sociologists who are pointing out that a maximum of freedom for individuals is possible only when we have a “pluralistic” power distribution. In other words, neither the extreme of frag-

mentized power nor the extreme of concentrated power (in government, business, labor, or any group) is healthy for the development of freedom. These currents of thought are substantial. And, I would conclude that a substantial number of sociologists occupy a middle of the road position on the relation of power and freedom. This is hardly doctrinaire socialism.

Wheaton College
Wheaton, Ill.
May 10, 1957

PHILOSOPHY

Robert D. Knudsen, S.T.M.

Crisis of Science

The so-called "crisis of science" has been the occasion for a considerable share of contemporary philosophical and theological reflection. Our purpose is not to give our own interpretation of this crisis but only to mention a recent publication or two that bears on it. However, the terms in which this "crisis" is described are familiar to us. There is the complaint that our moral knowledge has not kept up with the advances in scientific knowledge of facts and with technical progress; there is the complaint that the empirical data have become so extensive that science has become lost in them and is in desperate need of a synthesis; there is the complaint that where science has sought a synthesis it has become enmeshed in one or another "ism," e.g., psychologism; there is the complaint that science transgresses its proper bounds in seeking a unified view and that it should be critically limited to particular investigations, while all total views (world-and-life-views) are limited to a super-scientific perspective, perhaps called "philosophical" (Jaspers) or "mythical" (Berdyayev); there is the complaint that in transgressing its limits science has become "scientism", and that it has thus plunged us into a crisis of human freedom and personality.

Where diagnoses are partially or completely different there will be also different cures. So we have the attempt in the Encyclopedia of Unified Science to bring together the loose ends of empirical facts into a synthesis. On the other hand, we hear Jaspers say that such an attempt is not in the interests of true science and is destructive of philosophy.

I hope in the following column to enter into more detail concerning the position of Jaspers. In this issue, however, I shall limit myself to mentioning a publication or two that deals with this "crisis of science."

I have had occasion before to mention several of the volumes of the collected works of Edmund Husserl,

being published by Martinus Nijhoff, the Hague. A notable recent addition is the publication of Husserl's last major work, which deals with the crisis of European science: *Die Krisis der europäischen Wissenschaften und die transzendente Phänomenologie, eine Einleitung in die phänomenologische Philosophie*. Haag: Martinus Nijhoff, 1954. This is the sixth volume of the *Husserliana*. Volume VII has also appeared, under the title, *Erste Philosophie*, vol. I. There is a review and discussion of volume VI by Aron Gurwitsch of Brandeis University in *Philosophy and Phenomenological Research*, XVI (Mar., 1956), 380-399.

When he speaks of the crisis of science, Husserl does not refer to the technical validity of science. The crisis is that the sciences have become mere techniques. That has come about because Western man has lost sight of the *idea* which made him what he is and out of which the drive for Western science arose. Husserl wants to recapture this idea by means of his phenomenological philosophy and thus restore to man the idea of the meaning of his historical existence. Only then, thinks Husserl in rationalistic fashion, can he lead an authentic existence as a rational being, ordering freely and reasonably his relation to his environment and to his fellow man.

A very recent publication is the third volume of Herman Dooyeweerd's *A New Critique of Theoretical Thought*. Philadelphia: Presbyterian and Reformed Publishing Co., 1957. Volumes I and II appeared in 1953 and 1955 respectively. The third volume rounds out the trilogy, which is a revised and enlarged edition in translation of the first (Dutch) edition, which appeared some 20 years ago with the title, *De wijsbegeerte der wetsidee* (*The Philosophy of the Idea of Law*). An index to the present work is to appear as a fourth volume, but as far as I know it will not contain any text.

Dooyeweerd tries to approach the problem of the crisis of science from a Christian point of view. Any attempt to gain a total view of things while holding to the dogma of the autonomy of reason is bound to degenerate into one or another "ism." "Immanence philosophy" lands in psychologism, historicism, loyaltyism, etc. Science can be freed from these "isms" only in terms of a truly transcendent starting point, which is obtainable only in the light of God's revelation in Holy Scripture.

The third volume of the *New Critique* contains much interesting and significant material. One who is familiar with the Dutch edition will find that there has been considerable revision and expansion, some of the new material being drawn from Dooyeweerd's latest researches. The volume contains many insights that would interest not only the Christian philosopher but also the Christian physicist, biologist, political scientist, and especially the sociologist. The American Chris-

tian sociologist should not proceed further without taking note of Dooyeweerd's position, which is a refinement and elaboration of the theory of sphere-sovereignty developed first by the Dutch statesman and theologian, Abraham Kuyper. Now that Dooye-

weerd's sociological views have appeared in the English language, there will be little excuse for ignoring them.

Schiedam, Holland

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