JB Rhine

Joseph Banks Rhine (1895–1980) is considered to be the founder of modern parapsychology. An American botanist-turned-psychologist, he was the first to systematically apply experimental investigations in the field of psychical research. This work began in 1930 when he joined the psychology department at Duke University in Durham, North Carolina, USA, and later opened a new parapsychology laboratory there. When he retired from Duke in 1965, it moved off campus and became an independent international research center, since 1995 known as the Rhine Research Center, still located in Durham.

Early Years and Education

Rhine was born on 29 September, 1895 in rural Pennsylvania, the second of five children of an itinerant schoolteacher/merchant. He worked his way to attend Ohio Northern University and then the College of Wooster, but dropped out after science courses led him to question his faith and give up plans for the ministry. Following this jolt to his beliefs, Rhine enlisted for a two-year stint as a marine during World War I to resettle and consider a future career. Deciding to pursue a career in science, he returned home to Ohio to marry his high-school friend Louisa Weckesser. In 1920, the couple went to the University of Chicago where Louisa was already a student in plant physiology; both obtained MA and PhD degrees in botany.

Change of Profession and Path to Duke University

A pivotal change in direction began in 1922 when the Rhines heard a lecture in Chicago by Sir Arthur Conan Doyle, who was touring America to promote psychical research and spiritualism. Conan Doyle's sincerity was persuasive; the list of distinguished scientists about whom he spoke deeply impressed the Rhines and made them think of changing career direction.

Rhine recounted another incident that influenced him: one of his professors at the University of Chicago told about a neighbour who had a vision of her brother's suicide, described in detail and verified by several witnesses. How had the woman envisioned what had happened several miles away? The professor expressed perplexity, but Rhine was surprised that he evinced no interest in discovering *why* or *how* such apparent clairvoyance occurred.

> My interest in psychic research had grown out of my desire, common to thousands of people, I think, to find a satisfactory philosophy of life, one that could be regarded as scientifically sound and yet could answer some of the urgent questions regarding the nature of man and his place in the natural world.1

In 1926 Rhine, with his wife's agreement, gave up teaching plant physiology at West Virginia University and abandoned plans for a career in botany, in order to

begin his own investigations of mediumship and to obtain training in psychology and philosophy at Harvard in preparation for a career in psychical research.

In their first year the Rhines attempted to find reliable evidence of psychic phenomena with mediums in the Boston area. This failed, despite mentorship from Walter Franklin Prince, a prominent psychical investigator of the day. The Rhines were disappointed when their exposé of fraud by a popular local medium, Mina Crandon, was ignored by the editor of the *Journal of the American Society for Psychical Research* and disputed by some members, though several other prominent psychic researchers also questioned her activities. Rhine's report was published in the *Journal of Abnormal Psychology and Social Psychology* in 1927.2 The experience convinced Rhine never again to make assumptions about the veridicality of psychic claims without having a hand in the controls. 'I have decided not to accept any supernormal psychical phenomena,' he wrote to a colleague,' without actually obtaining them under my own conditions, and witnessing them myself.'3

In the spring of 1927, the Rhines accepted an offer to study some promising mediumistic data under the direction of William McDougall, a British psychologist who was setting up a psychology department at the newly-endowed Duke University in Durham, North Carolina. A former president of the British Society for Psychical Research (SPR), McDougall had long believed that such research should be conducted within the university setting.4 He welcomed Rhine as an advanced student, and offered him a teaching position for the 1929-30 academic year.5

Rhine continued the search for reliable mediums or psychics without success; he did, however, come upon an apparently telepathic horse in nearby Virginia. Initial field investigations with Lady were promising,6 as archived records of Rhine's tests show, but a later visit to confirm their findings revealed her performance by that time was dependent on her owner's sensory cuing.7 Though further work with the horse was abandoned, it is worth noting that this foray was Rhine's first attempt at forced-choice testing in the psychic realm and his first psi research publications. Throughout his life Rhine's interest in animal psi continued, including work with the military in 1950.8

With McDougall's support and access to his extensive psychical research library, Rhine introduced classes on psychical research into the curriculum9 and supervised a student working toward a master's degree in psychic research10 – both firsts for an American university.

Early ESP Research 1930–1934

In the summer of 1930, aided by a small university grant and the support of department colleagues, Rhine began testing for psychic ability with children at local summer camps, guessing cards stamped with numerals. Then in the fall he continued with Duke psychology students, guessing numbers or letters in sealed envelopes. However, the results were little above chance. Rhine then sought the help of Karl Zener, a perceptual psychologist at Duke; together, they modified the card-guessing procedure originated by Ina Jephson of the SPR by substituting a new type of target cards with geometric designs that could be easily distinguished and remembered. The result was the well-known ESP cards (originally called Zener

cards), a 25-card pack with five each of a star, a circle, a cross, a set of wavy lines, and a rectangle (later changed to a square).

A typical test run involved a subject guessing the order of the 25 ESP cards after they were properly shuffled and screened from the subject's view or enclosed in sealed envelopes. The experimenter recorded the subject's guesses as they were made, and the checkup was made by the experimenter against the target cards after the run, with the subject present. Conventional measurements based on the 1/5th probability of success were utilized to evaluate the significance of the results.

Later sessions were made using a telepathy procedure in which a 'sender' looked at the cards one by one behind a screen or in another room. However, test results showed that the clairvoyance procedure yielded as much success as the telepathy procedure, which led Rhine to adopt clairvoyance as the more common method of testing with ESP cards.

Early group testing of Duke students in the classroom setting showed little beyond chance results. Then a breakthrough occurred when one of the highest-scoring class members, Duke sophomore AJ Linzmayer, scored unusually well in an individual test session. In subsequent testing Linzmayer continued to guess the ESP cards at a rate markedly above what would be predicted by chance. By the end of the remaining two weeks of the school year he had guessed a total of 404 of 1,500 cards correctly (300 expected by chance).[11] The success of these initial experiments encouraged Rhine and his team of two graduate students to continue individual testing, and this led to the discovery of other high-scoring individuals. The most notable was divinity student Hubert Pearce, who quickly reached even higher scoring levels than Linzmayer and maintained them without decline for a much longer period.

By 1932, Rhine felt that he and his associates had provided solid experimental evidence to demonstrate the existence of psychic phenomena, which he named 'extra-sensory perception', or ESP. They had further found that ESP seemed to reveal natural relationships, in the same manner as ordinary psychological phenomena. For instance, both Linzmayer and Pearce lost their ability temporarily under the influence of the drug sodium amytal. Also, their performances seemed to follow predictable patterns that were found in conventional psychology, such as the temporary falling off of scores under intensive testing. As a result, Rhine felt that a demonstration of psychic ability's adherence to certain natural laws would do more to make the material acceptable to other scientists than any number of spectacular scoring results.[12] Overall in three years the team found a total of eight high scorers, roughly one in every five students tested. In more than 60,000 card trials, these college students scored an average more than 50% greater than chance. As the experiments continued, testing conditions in the Lab were increasingly tightened to exclude every possible opportunity for sensory leakage.

An important finding of the early tests was that distance did not seem to affect the scoring. This was demonstrated in the Pearce-Pratt Series of 1933–1934, often cited as the most controlled of the early ESP experiments. The clairvoyance procedure involved well-tested Duke student Hubert Pearce serving as subject and Rhine's research assistant J Gaither Pratt serving as experimenter, with the subject and the

cards located in two different buildings on Duke's West Campus. For three series Pratt was located with the cards in what was then the Physics Building, a hundred yards from Pearce's location in a Duke Library cubicle; in a fourth series Pratt changed location to be 250 yards distant in the Duke Medical School.

The method in all four series was as follows. Pratt picked up a card once a minute from a pre-cut and pre-shuffled pack, and without turning it up or looking at it, moved the card face-down onto a book. At that very minute Pearce, with a synchronized watch in the Library, guessed the face of the distant card on the book. After the testing, both men took the sealed records of their respective cards and guesses and gave them directly to Rhine for checking at the Lab, while retaining copies of their own records for later rechecking. Pearce's total score for the four series was 558 hits out of 1,850 trials (where 370 would be expected by chance). His overall accuracy in guessing the order of the unseen cards was 30%, compared to the 20% expected by chance—with odds against chance of 22 billion-to-one.13

Extra-Sensory Perception 1934

In April 1934, Rhine published a monograph entitled *Extra-Sensory Perception* summarizing the first six years of the Duke research – a landmark in the history of psychical research.14 A favourable review by the science editor of the *New York Times* drew the attention of other science writers and led to a large public response, surprising Rhine himself. More importantly, the recognition led to successful replications of Rhine's ESP studies in other laboratories in the US and in England. German psychologist Hans Bender reported clairvoyance results at the University of Bonn in 1934 that Rhine considered a tacit replication, and his work was later published in the *Journal of Parapsychology*.

While public acclaim followed quickly, the professional acceptance of Rhine's monograph did not become apparent until five or ten years after its publication. Fellow psychical researchers were generally favourable, but there were criticisms concerning the lack of more detailed reporting about experimental controls. Rhine welcomed criticism, if fair and honest, and credited much of this effort for helping him refine his techniques and improve the methods of control (see below).

The full impact of this monograph on the origins of experimental parapsychology is best described by historians of science Mauskopf and McVaugh in their definitive work on this topic.15

Duke Parapsychology Laboratory 1935–1965

In the fall of 1935, Rhine secured funding to support the establishment of the Parapsychology Laboratory on the East Campus of Duke University, as a facility separate from the Psychology Department. In the new twelve-room location the team continued to investigate concrete research problems about the mode of operation of ESP, as well as conditions affecting performance. It also embarked on a new line of research, precognition, and continued earlier work on psychokinesis.

Precognition

The earlier finding that ESP seemed unaffected by distance raised the question as to whether it should not also be independent of time. This consideration led to preliminary testing in 1933 to see whether the subject in ESP tests could identify a future order of the target cards, a process that Rhine labelled 'precognition'. Initial results were positive but the findings were not revealed until sufficient repetitions and other data had accumulated to assure a genuine effect. The first precognition results were published in the *Journal of Parapsychology* in 1938,16 and soon precognition became a regular pursuit for ESP research.

Psychokinesis

The first laboratory tests of mental action affecting matter, or psychokinesis (PK) as it came to be known, were initiated quietly by Rhine and his team in 1934, following a visit from a young gambler claiming that he could mentally influence the fall of ordinary dice. Early lab tests were with hand-thrown dice, subsequently replaced with cups with baffles, and further refined by employing machine-thrown dice to eliminate any possibility of subject manipulation. In 1943, after nine years of investigation involving many different experimenters – and based on improved methodology and sophisticated controls – Rhine and co-author Louisa Rhine published the first report making a case for a PK effect.17

With the advent of World War II in 1941, several of the researchers left for active duty overseas, and research slowed at the Duke Lab. Rhine and a few remaining assistants took the opportunity to re-examine research records of earlier years, paying specific attention to psi performance within the test runs (such as position on the record sheet), to incidents of scoring decline, and to conditions that led to below-chance scoring (psi-missing). In recent years, evidence demonstrating the decline effect had become an important issue in other areas of scientific research such as pharmacology.18

By the 1950s, psi research had progressed from proving that psychic abilities exist to coordinated programs aimed at the functioning of ESP and PK. The testing of gifted subjects gave way to testing groups of subjects – for instance by Gertrude Schmeidler at the City College of New York – on how attitude toward ESP affected scoring, the 'sheep-goat' effect. Groups of schoolchildren tested by a Dutch experimenter scored better when their teacher acted as sender, and Duke Lab workers found that students scored better when tested by the teachers they liked best – thus introducing the 'experimenter effect'. In addition to ESP cards as target material, other materials such as pictures or clock faces were added, and automated procedures were modernizing psi testing and scoring at the Duke Lab. The 1960s saw active study of ESP in animals, along with the continuing study of spontaneous case material initiated earlier by Louisa Rhine.

Criticism and Advances in Methodology

Criticisms of methodology and mathematical statistics began to surface in 1935, provoked by the many popular publications that followed the 1934 monograph. The first round of criticism was aimed at the very foundation of the statistical procedures, notably by psychologists RR Willoughby at Clark University and CE

Kellogg at McGill University. Rhine and other researchers responded extensively to these criticisms, and eventually the Institute for Mathematical Studies declared its approval of the mathematics used by the Duke researchers. In 1937 IMS president Burton Camp stated in a press release: 'If the Rhine investigation is to be fairly attacked, it must be on other than mathematical grounds.'19

The year 1937 was an eventful year at the Duke Lab. In March the new *Journal of Parapsychology* was inaugurated, 'officially demarcating the area of psychical research that comprised parapsychology'.20 Rhine's popular account of the Duke research program, *New Frontiers of the Mind,* appeared in April and was selected by the Book-of-the-Month Club. In September a radio series about ESP was launched by the Zenith Radio Corporation.

These events generated a high level of publicity, which in turn led to renewed attacks, particularly by American psychologists. The controversies came to a head at a panel debate at the annual convention of the American Psychological Association in September 1938. On the panel were three supporters of ESP research – Rhine, his statistician and Gardner Murphy of Columbia University – and three critics. Rhine expected this would be his 'heresy trial', but afterwards felt that the team had received a fair hearing and successfully defended its methods, citing examples of continuing methodological improvement.

An aftermath was an extended effort by Rhine and his team to publish a definitive report on ESP research in a single volume. All experiments of the previous decade were reported thoroughly and the mathematical and statistical treatments explained in detail. The book addressed the principal criticisms, 32 by Rhine's count, and went on to demonstrate how the six 'best' experiments could not be explained by any combination of these criticisms. The manuscript was shared with the principal critics before publication and their invited replies were included in the volume. The book was titled *Extra-Sensory Perception After 60 Years,* a time period that started with the founding of the SPR in 1882, and was published in 1940.21

The professional response to *ESP-60*, as it was often referred to, was far more positive than it had been to the earlier monograph, and parapsychology gained a measure of acceptance. Other laboratories began ESP research and more independent replications began to be reported. A 1993 statistical review of Rhine's early ESP experiments reported on the website of the Parapsychological Association states:

> Twenty-seven (27) of the 33 studies produced statistically significant results—an exceptional record, even today. Furthermore, positive results were not restricted to Rhine's lab. In the five years following Rhine's first publication of his results, 33 independent replications were conducted at different laboratories. Twenty (20) of these (or 61%) were statistically significant (where 5% would be expected by chance alone.)22

Principal Findings

Throughout his career, Rhine was in great demand as a speaker and was a prolific correspondent. The Parapsychology Laboratory Records at the Rubenstein Library

at Duke University contain thousands of letters he wrote during his lifetime, exchanging with colleagues detailed specifics of his work and methods, as well as responses to individuals, however humble, who sent accounts of their psychic experiences and prophetic dreams. He corresponded with such notables as Carl Jung, Upton Sinclair, Charlie Chaplin, and Aldous and Julian Huxley. Rhine authored and co-authored several books and dozens of articles that appeared in professional journals as well as in the popular press.

The principal tenets of Rhine's findings – the 'Rhinean doctrine' as it has sometimes been cited – include:

- The non-physicality of psi – all evidence points to psi as mental and not physical.
- The unconscious (spontaneous) nature of psi – psi capability apparently cannot be willed or consciously directed.
- The universality of psi – though some individuals are clearly more gifted, the accumulated evidence suggests that psi is a natural and widespread aspect of human endowment similarly affected by such factors as stress, boredom, fatigue, and depressant drugs.
- The problem of survival. The issue of survival was the initial impetus for Rhine's change of course from biology to parapsychology and it remained an overhanging question throughout his life. Early work with mediums, however, failed to yield conclusive evidence of an afterlife, leading Rhine to direct his energy to establish the existence of the basic phenomena of ESP and PK (or psi) as fact.

FRNM and the Institute for Parapsychology

In 1962, with the help of benefactors such as Chester Carlson, the founder of Xerox, Rhine started the Foundation for Research on the Nature of Man (FRNM). When he retired from Duke in 1965 he moved FRNM off campus where the work continued on both a national and international scale. For the next thirty years FRNM served as a parent organization to the Institute for Parapsychology, its major research and education arm, and the Parapsychology Press, its publishing branch. In 1995, the centenary of Rhine's birth and fifteen years following his death, FRNM was renamed the Rhine Research Center to honour the Rhines and their unique contributions to parapsychology.

Contributions

For almost half a century, from 1930 until the late 1970s, Rhine was the undisputed leader of experimental parapsychology in determining its course worldwide. Among his many significant contributions, the most important are these:

- Established and directed a research laboratory devoted to psychic research in an academic setting.
- Standardized research procedures that could be replicated by new and different experimenters. This allowed comparison of results along with repetitions to further substantiate the findings.

- Isolated telepathy and clairvoyance in a laboratory setting, distinguishing them as different forms of the same ability. Accumulated evidence for precognition and PK as other forms of psi. Rhine considered all four forms of psi as parts of a unitary process.
- Founded the *Journal of Parapsychology*, a peer-reviewed research journal.
- Developed a network of researchers in other colleges both in the US and abroad.
- Founded the international Parapsychological Association.

Significant as these achievements are, the overall impact of what Rhine initiated at Duke may be his lasting legacy. Rhine trained or directed numerous students and worked with many visiting scholars from around the world, which influenced the course of parapsychology for two succeeding generations of psi researchers. He provided a Mecca for those with interest in the field, so that by the time of his death in 1980 almost every serious researcher had spent time studying or working with him, including Robert Thouless, Hans Bender, John Beloff, Gertrude Schmeidler, Robert Morris, John Palmer, Charles Honorton, Karlis Osis, James Carpenter, Erlendur Haraldsson, KR Rao, and many others.

Ramakrishna Rao, his successor at the Institute for Parapsychology, said at a memorial for Rhine in 1980, 'His admirers as well as his adversaries agree that parapsychology is what it is today largely because of him. It is difficult to find a parallel situation in the development of any other science.'[23]

In 2021, a collection of Rhine's letters from 1923 to 1939 was published.[24] These letters and other documents pertaining to Rhine's life and the Parapsychology Laboratory are preserved in the Duke University library.[25]

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Endnotes

Footnotes

- 1. Rhine (1937), 51.
- 2. Rhine & Rhine (1927). For details of this episode, see Matlock (1986).
- 3. Rhine to Saposnekov (9 August 1926).
- 4. McDougall (1937).
- 5. Mauskopf & McVaugh (1980), 87.
- 6. Rhine & Rhine (1929a).
- 7. Rhine & Rhine (1929b).
- 8. Rhine (1971).
- 9. Rhine to Sinclair (16 February 1933).
- 10. Rhine to Prince (1 July 1931).
- 11. Broughton (1991), 68.
- 12. Broughton (1991), 68.
- 13. Rhine & Pratt (1954).
- 14. Rhine (1934).
- 15. Mauskopf & McVaugh (1980), 87.
- 16. Rhine (1938).
- 17. Rhine & Rhine (1943).
- 18. Lehrer (2010).
- 19. Camp (1937).
- 20. Broughton (1991), 71.
- 21. Rhine et al. (1940).
- 22. 'InternJack' (2015).
- 23. Rao (1982), vii.
- 24. Ensrud & Feather (2021).
- 25. Matlock (1991).

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