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DONALD BENJAMIN LINDSLEY
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A Biographical Memoir by

NORMAN M. WEINBERGER

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Westood Village Studio, 1952.

Donald B. Lindsley

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December 23, 1907–June 19, 2003

BY NORMAN M. WEINBERGER

DONALD BENJAMIN LINDSLEY was perhaps the most influential physiological psychologist of the middle third of the 20th century. He was a pioneer in three major fields: the human electroencephalogram (EEG), mechanisms of brainstem and thalamic control of cortical function, and the neurophysiology of human visual attention and perception. Many scientists believe to this day that along with Horace ("Ted") Magoun and Giuseppe Moruzzi, Donald Lindsley should have been awarded the Nobel Prize in Physiology or Medicine for their discovery of the reticular activating system. Within the field now known as systems neuroscience, this finding alone has been second to none in elucidating basic principles of brain function.

Donald Lindsley was born December 23, 1907, near Cleveland, Ohio, in the small farming community of Brownhelm. His forebears had migrated to the area from New England in the mid-19th century. Don was the youngest of four sons (one of whom did not survive infancy) of Benjamin and Martha ("Mattie") Lindsley. Ben worked as parts manager for the Cleveland Stone Company at a nearby quarry and served Brownhelm as clerk of both the Board of Education and the Township Trustees. Both parents were generous of their time and assistance, whether helping with taxes or baking for the community, and were highly respected. Don's youth was by all accounts idyllic: living in a small-town America that now exists mainly in the imagination. Sports occupied most of his interest and time. In high school he won medals in track, played first base in baseball, and was the captain of the basketball team that won a county title. Summers and spare time were spent hunting, fishing, and working as a water carrier or derrick spotter at the quarry, picking apples and potatoes, driving hay wagons for local farmers, or taking photos of families at a lakeside amusement park. Don also learned to play the trumpet, was a member of bands, even working his way to Europe on a cruise ship while in college. He maintained a lifelong interest in jazz and other music.

Don's 12 years of public education took place in a small wooden school building. He had never given any particular thought to attending college, as none of his family had done so, and the family could not afford it in any event. However, Mr. Marshall, the principal, coach, and science teacher, influenced him to make that commitment, explaining that Don could work his way through. Fortified by values derived from a hardworking, plainspoken family, highly supportive in all of the most important nonmaterial aspects of life, Don began his higher education without any notion of where it might all lead.

Although the family belonged to the local Congregational church, which was quite liberal, and Oberlin College, which was a Congregational school and an outstanding liberal arts institution was only 8 miles away, Don decided to attend Wittenberg College, affiliated with the Lutheran church. His rationale was no deeper than that of many teenagers; it was quite a bit further away, in Springfield, Ohio, and according to his later recollection, "Distance seemed enchanting."

This perhaps proved to be the most important decision of his professional life.

As fate would have it, Don arrived in September 1925 at the inauguration of Wittenberg's newly established Department of Psychology, with Martin L. Reymert as the chair. Lindsley and his parents thought that a degree in business seemed most reasonable. Not certain which other classes to take, his academic adviser suggested that Don enroll in Reymert's introductory course, advice that he followed although possessing no knowledge of what "psychology" meant. The subject matter proved to be of sufficient interest that Don next took Reymert's laboratory course in psychology. This experience proved influential, as Lindsley began to understand science and begin his commitment to the field of psychology. At the end of his freshman year Reymert hired Don as his assistant and thus began an academic father-son relationship.

Among his many duties, in addition to helping with the lab course, Don served as Reymert's chauffeur and to some extent as his secretary. Both jobs greatly broadened and deepened Lindsley's appreciation for the scope of psychology as well as expanded his knowledge base. Thus, when Reymert attended seminars, meetings, and visited well-known psychologists, such as Titchener at Cornell, Don was always introduced and became part of the conversation. For example, during a trip to Harvard, Don was permitted to sit in on a meeting of the prestigious Society of Experimental Psychologists, little realizing that one day he would be elected to this august society. Reymert had convinced Wittenberg to build a special psychology lab in the new chemistry building then under construction, and furthermore to celebrate its opening with a symposium on emotions, and Don typed the letters of invitation and other correspondence. The symposium was held in October 1927 and was attended by many notables.

In 1929 when Don was preparing for graduation with a major in psychology and a minor in philosophy, Reymert suggested that he apply to the University of Iowa for graduate studies. He was admitted and awarded a scholarship. Lindsley chose to study with Lee Edward Travis, whose research included the analysis of muscular activity in reflexes and in speech. His laboratory possessed the most modern electromyographic equipment, some of which had been designed by Arthur H. Ford, a professor of electrical engineering at Iowa who would later become Donald Lindsley's father-in-law.

Lindsley's graduate period was highly productive, as he mastered the intricacies of the equipment and received a very solid foundation in physiology, in addition to becoming proficient in psychology. He published six papers on both human and rat muscle activity during the three years he needed to achieve the doctorate, in 1932. Don also managed to court Ellen Ford, an actress, theatre arts major, and English teacher. They were wed in 1933.

Jobs were scarce during the Great Depression, so Don felt fortunate to secure a one-year position as instructor at the University of Illinois. He was awarded a National Research Council Fellowship during this period and intended to study with Lord Adrian at Cambridge in the United Kingdom. Although arrangements had been made the previous year, it happened that Adrian's lab was about to undergo extensive renovation, possibly related to his award of the Nobel Prize (with Sherrington) in 1932. Therefore, Lindsley sought an alternative site and settled on the Harvard Medical School, in the laboratory of Alexander Forbes, who was one of the world's leading electrophysiologists.

As an NRC fellow in the years 1933-1935 Lindsley was able to record from single motor units in humans and to study relationships between surface electromyograms (EMGs) and motor units in the patellar (knee-jerk) reflex. Having been awarded a second year of support, Lindsley was asked by Stanley Cobb, chief of the Department of Neuropsychiatry at Massachusetts General Hospital to set up an electromyography laboratory. This afforded the opportunity to gain wide experience in clinical matters, including recording EMGs during surgeries. Studies of myasthenia gravis (muscle weakness) and myotonia (impairment to relax muscles) followed, resulting in three papers of which Don always was particularly proud. He also studied the pharmacology of muscle contraction and published with Arturo Rosenblueth, a leading Mexican neurophysiologist and an associate of Walter Cannon. Lindsley's introduction to the EEG also occurred during this period. He served as a subject for and closely observed the experiments of Gibbs and Lennox who were beginning to study clinical applications of Hans Berger's recent discovery of the human EEG.

After completing his fellowship at Harvard, Don secured a position in the Department of Anatomy and Physical Anthropology at the medical school of Western Reserve University in Cleveland. The chair, Dr. Todd, asked him to obtain records of the psychogalvanic skin response in children. Lindsley readily agreed and suggested that obtaining EEGs from children also would be useful since no normative data existed. Although he had no experience with either measure, Don rapidly taught himself and began obtaining recordings of subjects from infancy through mature adults. This produced his first EEG publication, in Science in 1936. In 1938 Todd wished to renew his appointment, but by that time major research universities had taken notice, and Lindsley accepted a tenure-track position as assistant professor in the Department of Psychology at Brown University and the Bradley Hospital in East Providence.

The psychology department at Brown had a biologically oriented and highly distinguished group of psychologists.

Walter S. Hunter was the head; Clarence Graham and Harold Schlossberg were associate professors; Lindsley, Edward H. Kemp, and J. McV. Hunt were assistant professors, while Lorrin Riggs and Carl Pfaffman were instructors. Hunter, Graham, Pfaffman, Riggs, and Lindsley were all later elected to the National Academy of Sciences. In addition to teaching and regular faculty duties at Brown, Lindsley was director of psychological and neurophysiological work at Bradley, where he also supervised clinical psychology for which he initiated an intern training program. Among his research accomplishments during this period was a pioneering study of the effects of drugs on the EEG and behavior of children who suffered from behavioral disorders. And continuing his developmental analysis of the EEG begun at Western Reserve, he accomplished the first in utero recordings of the EEG and EKG, as early as the fifth month. Overall, Lindsley provided the first systematic and ultimately foundational information on the development and maturation of the EEG, which took final adult form at puberty. In so doing he set norms against which suspected cortical dysfunction could be compared.

World War II intervened and Don became civilian director of radar operator research and training at Hobe Sound, Florida. Sworn to secrecy, Don in later years would say only that he had bombed every major city in the United States. Returning to Providence in late 1945, Lindsley was offered a full professorship at Northwestern University. He accepted, thus achieving that rank without ever having been an associate professor. Lindsley had three responsibilities. He set up a human psychophysical laboratory at the main Evanston campus. At the Cradle Society's hospital in Evanston, he established an EEG lab for infants. Finally, he undertook basic neurophysiological research with Horace Magoun at the Northwestern Medical School in downtown Chicago. The latter activity solidified a burgeoning friendship with Magoun that would be close, mutually supportive, and lifelong. In fact, their collaboration produced a sea change in the understanding of the functional organization of the brain.

To adequately appreciate this epochal transformation it is necessary to recall that the prevailing theory of sleep and waking was based on the 19th-century belief that brain organization and behavior was based on a sensory-motor schema. The waking state was thought to be supported by sensory input while sleep was conceived as the consequence of sensory withdrawal. For example, when desiring to sleep, people and animals lie down, which decreases sensory input to the brain from proprioceptors in antigravity muscles, while closing of the eyes eliminates visual input. In the 1930s Frederick Bremer, the Belgian neurophysiologist, produced a chronically sleeping cat by sectioning the brain stem between the midbrain and the thalamus. As such a lesion eliminates most sensory input to the thalamus and the cerebral cortex, Bremer concluded that he had essentially proven the sensory deafferentation theory of sleep. This was reasonable at the time and unchallenged because there was no knowledge of another major type of system in the brain beyond sensory and motor systems.

Shortly after Lindsley arrived at Northwestern, Magoun and Giuseppe Moruzzi, a visiting scientist from the University of Pisa, were conducting experiments on the role of the reticular formation on spinal reflexes in the anesthetized cat. They were electrically stimulating this network of neurons (occupying largely the medial region of the brain stem, from the medulla through the pons and midbrain) while monitoring the cortical EEG to make certain that the depth of anesthesia was sufficient. To their astonishment they noticed that stimulation changed the cortical EEG from high-voltage slow waves, typical of sleeping and anesthesia, to a low-voltage high-frequency pattern (EEG activation), known at that time to occur only in the waking state. Thus, did Moruzzi and Magoun serendipitously discover a new type of brain system whose existence had not been suspected.

The findings, published in 1949, were attacked by proponents of the prevailing theory of sleep and waking. For example, Bremer argued that the stimulation had simply activated sensory pathways, such as those carrying somatosensory or auditory information, which ascend to the thalamus and cortex in nearby lateral regions of the brainstem. It was at this juncture that Don Lindsley led a team to perform the critical experiments that established the validity of the new system, named the ascending reticular activating system.

In the first experiment Lindsley and colleagues made lesions in the reticular formation or interrupted the ascending sensory pathways, leaving the reticular formation intact. They found that reticular lesions prevented any stimulus-induced activation of the cortex, whereas interrupting the sensory paths had no effect on EEG activation produced by stimulation of the reticular formation (1949). As this study also had been conducted in the anesthetized cat, it validated the interpretation of Moruzzi and Magoun. However, it did not speak directly to the major issue, which was whether the reticular formation was necessary for the state of wakefulness, without which there could be no perception, learning, memory, general cognitive processes, or normal adaptive behavior. Therefore, Lindsley and associates performed a second, critical experiment in which the same types of lesions were made in animals that were allowed to recover from surgery and were maintained for extended periods of time. They found that lesions of the sensory pathways that ascended through the brainstem had no effect on the sleep-waking cycle or the cats. Moreover, behavior in the waking state was relatively normal given the loss of much sensory information to the thalamus and cortex. In contrast, the animals with lesions of the reticular formation did not awake and remained somnolent for up to two months, at which point the experiment was terminated (1950).

These seminal experiments provided the foundation for the blizzard of subsequent research on the neural mechanisms of state and on the vast ascending and descending influences of the reticular formation, including sensory/perceptual, motor, endocrine, visceral and motivational systems, modulation of the cerebral cortex, ingestive, mating, aggressive and defensive behaviors, arousal, sleep, waking, attention, emotion and learning and memory. The findings of Magoun, Lindsley, and their associates forced a new formulation of the functional organization of the brain, its component systems, and their interactions. Most workers would agree that the discovery of the widespread influences of the reticular formation remains the single most important advance in understanding control of the cerebral cortex and the key to the coordination along the neuraxis of virtually all brain systems, because they enable integrated and goal-directed behavior. Subsequent findings, stemming from the development of histochemical techniques in the 1960s, that the ascending reticular activating system included cholinergic, noradrenergic, and serotonergic brain stem nuclei and their diffuse projections, has only enhanced the fundamental concept of central neuromodulatory systems and their essential role in systems and behavioral integration.

Shortly thereafter the University of California, Los Angeles, recruited Ted Magoun to head the Department of Anatomy in its new School of Medicine. Don Lindsley accepted an invitation to teach there during the summer of 1950 and joined the UCLA faculty in 1951, with appointments in the departments of psychology and pediatrics, and later, physiology. However, research facilities on campus were scarce so Lindsley undertook the study of children and adults suffering from cerebral palsy in the Marion Davies Clinic, a few miles from the campus. He also had use of an EEG lab for basic human research at the Wadsworth Veterans Administration Hospital adjacent to UCLA for a few hours starting at 6:30 a.m. Animal research was conducted at the Long Beach VA Hospital, some 35 miles south, this before the advent of freeways. Lindsley finally acquired adequate on-campus research facilities in 1961 with the opening of the 11-story Brain Research Institute, which he cofounded.

At UCLA Lindsley began research on the visual system and psychological processes. This occupied the bulk of his efforts during the remainder of his career, resulting in more than 60 empirical studies in cat, monkey, and human subjects. Lindsley's lab produced pioneering studies of relationships between the amplitude and configuration of visual evoked potentials and attention, perception, and learning. Although he did not return to direct studies of the reticular formation, his studies of the visual system did so in an indirect manner. For example, in seminal experiments his laboratory found that increasing the level of behavioral arousal produced facilitation of processing in the visual system, including increased temporal acuity as indexed by visual evoked potentials to closely spaced pairs of visual stimuli.

Lindsley did not abandon his investigation of the central modulation of the cerebral cortex. Rather, emphasis shifted to experiments on the neurophysiology of the thalamic reticular system, composed of the midline and associated intralaminar nuclei of the thalamus, which had widespread anatomical projections to the cerebral cortex. Starting in 1965, Lindsley's lab produced more than 20 experimental papers on both capabilities of the thalamic reticular system, including the differentiation of its synchronizing and activating functions by doubly dissociative lesions, its modulation of sensory cortical processing, and its involvement in associative learning.

Lindsley remained active well into his 80s, although he officially retired and received emeritus status in 1977, near his 70th birthday. Curiously, his final paper was an obituary of Lee Edward Travis in 1989, his doctoral mentor who had lived to the age of 101 and with whom he had published his first paper, in 1931. Lindsley's publication record of more than 240 papers gives insufficient indication of his influences. From an early age he was sought after to write critical reviews and synthetic conceptual works because of his extraordinary breadth of knowledge, encompassing both the research lab and the human clinic, and his ability to communicate highly complicated material in a straightforward and easy-going manner. He authored more than 50 of these chapters. When asked, somewhat impudently, the favorite of all his publications, he did not hesitate to single out his chapter (1951) for Stevens's *Handbook of Experimental Psychology*. Entitled simply "Emotion," Lindsley here introduced, indeed formulated, the activation theory of emotion. It integrated psychological aspects of emotion with both peripheral physiology (e.g., autonomic nervous system) and more particularly with the reticular formation. Lindsley believed that this single writing had a substantial impact on concretely showing psychologists how neural factors could facilitate an understanding of behavioral and psychological processes; Don thought that this chapter encouraged many to become what is now referred to as behavioral neuroscientists.

During his long career, Lindsley directly influenced those who studied in his laboratories. Under his tutelage some 50 doctorates were awarded, an exceptional number, and more than 70 postdoctoral students and visiting scientists found a welcome home and continual support in Don's labs. They included a wide range of systems neuroscientists, including R. W. Lansing, M. Kietzman, W. L. Salinger (human visual perception), G. Rose (visual development), E. Donchin, M. Haider (human-event-related potentials), J. Skinner, M. Velasco (nonspecific thalamocortical mechanisms), N. M. Weinberger (learning and memory), L. Chalupa, C. K. Peck, K. M. Perryman (animal visual system and perception), and J. R. Coleman, C. L. Wilson (hypothalamic-hippocampal interactions).

Personal recollections provide insight into Don Lindsley's interactions with his students and postdocs. Manny Donchin, who has a long and distinguished career as professor and former chair in the Departments of Psychology at both the University of Illinois and the University of South Florida, received his doctorate with Lindsley in the 1960s. He states:

> Don Lindsley turned out to be an ideal mentor. His lab, embedded in the pioneering interdisciplinary atmosphere at UCLA's Brain Research Institute, shaped my research for decades. I won't dwell in the brief space I have on Don's major contributions to what we call now "Neuroscience." It is equally important to note with admiration, and gratitude, Don's style as a mentor. It was obvious from the first day in the lab that Don considered all his graduate students as colleagues who shared with him the all encompassing search for an understanding of how the Mind is implemented by the Brain. He spent countless hours (usually starting around midnight) in serious discussions of ideas, research paradigms, all brushed by his encyclopedic knowledge of the field. He always insisted on the most rigorous paradigms, and on the most meticulous experimental designs. Sloth was simply not an option. Every assertion was subjected to penetrating examination.
>
> He was also enormously flexible in his grumpy, old fashioned, way. I was lucky to arrive at UCLA just as Signal Averaging revolutionized the study of brain activity as it related to Psychology. This was a brand new technology that opened fantastic new avenues. Don Lindsley joined in this chase with enthusiasm and vigor. He assured that we were always faithful to the paradigm he favored in which all questions about the Brain and the Mind

employed the same precision and depth in the definition and measurement of both the Psychological constructs and the brain measures. The roots of much that is of value in my own work over the decades are deeply anchored in those wonderful days at the Lindsley lab at UCLA.

Charles L. Wilson, Professor Emeritus of Neurology at the UCLA School of Medicine, was a postdoc under Lindsley's tutelage. He contributes this perspective:

To me, Don Lindsley's greatest contribution was in his creation of a "Systems" approach to the study of brain and behavior long before it was a major theme of neuroscience. As a post-doc in the Lindsley Lab in the early 1970's I was given the task of evaluating the neurophysiological response of limbic structures such as hippocampus and septum to electrical stimulation of numerous brain stem sites, such as nucleus pontis oralis and caudalis, and the midline raphe nuclei. I was particularly interested in the relation of hippocampal function to learning and memory, and I had difficulty in assimilating the relationship of my interests to the attentional and motivational concepts that fueled his interest in ascending brainstem influences on behavior. Periodically, these differences in perspective led to long discussions of the results of my work and their significance, and sometime the discussion included other post-docs with diverse research questions. During these sessions, he would somehow introduce ideas that synthesized numerous concepts we had previously not considered, and the conversation would end with renewed appreciation of his ideas and a characteristic interlacing of the fingers of his left and right hands while he said "So you see how it all fits together." At that point we did understand with new clarity, how interactions of multiple brain systems that were previously vague and indistinct could generate the results of our experiments. Years later, whenever we would discuss any particularly difficult question of brain/behavior interaction, we would end the discussion with the back and forth interlacing of our fingers to indicate that if we could just understand these problems with the same insight as Don Lindsley, we could more satisfactorily see "How it all fits together."

Leo Chalupa—formerly distinguished professor of ophthalmology and neurobiology at the University of California, Davis, and now vice president for research at the George Washington University—was a postdoc with Don in the 1970s. He has this recollection:

Don Lindsley was the major influence on my professional life, and he also had a pronounced impact on many aspects of my non-professional life. I joined his lab as a postdoctoral fellow in 1970 when I was 24. He was 62 and at the peak of his preeminence as professor of psychology, physiology and psychiatry as well as one of the most distinguished members of UCLA's Brain Research Institute (BRI). I have a vivid memory of Don taking me around his many labs that were located both in Franz Hall, the Psychology Department building, and in the BRI within the medical school complex, where I was to work. As we finished the tour of his facilities, he turned to me and said: "Boy, this will be the golden period of your life!" For the 5 years that I spent with him, that was certainly the case.

There are many stories that I have told my own students over the years about Don, and a few of these I related in the Lindsley obituary I wrote for the American Psychologist in 2004. Here is one of the things I remember most fondly about my interactions with Don. The optimal time to work on papers with him was in the evening, when the likelihood of being interrupted by phones calls, unexpected visitors, and other matters was relatively low. So our standard thing was to have an early dinner at a diner on Wilshire Blvd where we would both invariably order the shrimp cocktail and a cup of coffee. After dinner we would proceed to his library, adjacent to his office, for the writing session. We both smoked pipes while Don re-wrote, typing with two fingers on an old electric typewriter, the paper I had painstakingly written, one that I naively considered to be a final draft. Not uncommonly, he would stop and tell a story about something or someone that might be only tangentially related to what we were working on. At such times I would be torn between the genuine pleasure of listening to his story, which sometimes could go on for an hour or more, and my impatience to get the paper ready for submission. Many a time we made very little progress, having only a few paragraphs to show for the evening's effort, before heading home around midnight. Today I remember the fascinating stories Don told me during those writing sessions better than some of the papers that we co-authored.

Ted Magoun was one of Don Lindsley's closest friends, although of a differing, quite reserved personality. James Magoun, his son, offers this revealing characterization of Lindsley and an illuminating account of the relationship between these two remarkable neuroscientists:

Don was probably my father's closest friend. They were colleagues at Northwestern and later at UCLA, and collaborated on numerous research projects and other academic endeavors over many decades. But beyond their professional ties, they very much enjoyed each other's company and spent a great deal of time together. It was Don who would usually drop by my parents' house (three blocks from Don and Ellen's), spend a few minutes exchanging pleasantries with my mother, and then he and my dad would settle down in comfortable chairs in the living room and carry on wide ranging conversation for an hour or two. This pattern endured for thirty-five years (until dad no longer recognized people). Dad genuinely enjoyed their frequent meetings and was always put in better spirits as a result. The topics of their conversation were sometimes family matters, sometimes work-related and sometimes personal. No subject was off limits. Don truly played a constructive and supportive role in my father's life that no other person did or could play. I believe this was directly attributable to Don's uniquely unpretentious, affable nature. I believe my father recognized this and was deeply grateful for it.

A capsule summary of Donald Lindsley's influence is provided by the citation from the American Psychological Association's award of its *Gold Medal for Lifetime Achievement in Psychological Sciences* in 1989:

For a lifetime of scholarly commitment—both pioneering and original. For his leadership in applying the technology of electrophysiology to the study of the biological substrates of behavior. For his ability to incorporate the latest innovations in this technology successfully to the work of his laboratory group. For an elegant series of studies of the ascending reticular activating system and its role in arousal. For his activation theory of emotion, which revolutionized the way we think about this phenomenon. For his deep commitment to the interdisciplinary perspective. For his role as teacher and mentor. His roster of 50 PhDs and more than 70 post-doctoral students and visiting scholars reads like a veritable Who's Who of the modern brain sciences. The Donald Lindsleys of this world are fast becoming an endangered species.

Lindsley's honors, far too numerous to list in their entirety, include:

Election to the Society for Experimental Psychologists, 1942
Presidential Certificate of Merit for World War II effort, 1948
Election to the National Academy of Sciences, 1952
Distinguished Scientific Contribution Award, American Psychological Association, 1959
Election to the American Academy of Arts and Sciences, 1965
Annual Donald B. Lindsley Prize in Behavioral Neuroscience established by the Society for Neuroscience, 1978
Distinguished Scientific Contribution Award, Society for Psychophysiological Research, 1984
Fellow of UCLA School of Medicine Award: For Great Contributions to Medicine, 1986
Distinguished Graduate Award, Department of Psychology, University of Iowa, 1987
Ralph Gerard Prize, (with H. W. Magoun) for distinguished Contributions to Neuroscience, Society for Neuroscience, 1988
American Psychological Foundation Gold Medal Award for Lifetime Achievement in Psychological Science, 1989
Honorary lifetime membership in the Department of Psychobiology, University of California, Irvine, for outstanding contributions to its founding 25 years ago and in the years since then, 1989
Century Award, International Organization of Psychophysiology, 1998
Honorary degrees from Brown University, Sc.D., 1958; Wittenberg University, D.Sc., 1959; Trinity College, Sc.D., 1965; Loyola University, D.Sc., 1969; and Johannes Gutenberg University, Ph.D. honoris causa, 1977

Lindsley was an active member of numerous societies, holding office in many, including:

American Psychological Association, 1932
American Physiological Society, 1937
Society for Experimental Biology and Medicine, 1937
American Psychosomatic Society, 1944
American Electroencephalographic Society, 1947, charter member
American Association for the Advancement of Science, 1939
Society for Research in Child Development, 1952
American Academy for Cerebral Palsy, 1952

American Academy of Neurology, 1956
Psychonomic Society, 1959
IBRO/UNESCO International Brain Research Organization, 1960
National Association for Retarded Children, 1958
International Society for Developmental Psychobiology, 1967
Pavlovian Society of America, 1968
Society for Neuroscience, 1970, charter member
Society of Psychophysiological Research, 1983
Association for Psychological Science, 1988, charter member

Throughout his long and distinguished career Lindsley was highly active in other professional venues. For example, he served on several military agencies during 1942-1958, and federal granting organizations, held state of California special appointments, and was a member of major private foundations and editorial boards.

Lindsley's family life was active and happy, full of traditional Thanksgiving and Christmas family dinners, travel across the United States, and lots of discussion. He and his wife, Ellen, had four children starting in 1936: David, Margaret, Robert, and Sara Ellen. David followed Don into systems neurophysiology and became a full professor in the Department of Physiology at the University of Southern California. He was a well-regarded and sympathetic mentor and scholar, unfortunately passing away in February 2009.

Don and Ellen were married for 62 years and had six grandchildren and four great-grandchildren. Ellen predeceased him. Lindsley stayed intellectually active and interested in the lives of family, friends, colleagues, and former students until overcome by the infirmities of age. He passed away near his home in Santa Monica, California, on June 19, 2003, at the age of 95, having lived what he recognized as a good, fortunate, and productive life.

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