

YERKES, ROBERT MEARNES

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Robert Mearns Yerkes

Born: 1876 | **Died:** 1956

Nationality: American

Primary Field(s): Psychobiology, Comparative Psychology, Intelligence Testing

1. Summary of Life and Work

Robert Mearns Yerkes was a highly influential American psychobiologist and institutional organizer recognized primarily for his seminal work in the field of **comparative psychology**. After completing his doctoral studies at Harvard University in 1902 under the distinguished experimental psychologist Hugo Münsterberg, Yerkes remained on faculty at Harvard until the outbreak of World War I. His early academic career was marked by broad interests, spanning from studies of simple reflexes in invertebrates to complex cognitive processes in primates, laying the groundwork for a scientific approach to behavioral analysis across species.

Yerkes shifted his focus dramatically during and after World War I, moving from pure research to large-scale organization and institutional building. He is perhaps equally famous for his instrumental role in developing and implementing mass intelligence testing within the U.S. Army during the war, an effort that fundamentally shaped the future of applied psychology and psychometrics in America. Following the war, Yerkes dedicated himself to establishing advanced facilities for the study of primate behavior, culminating in the founding of the Yale Laboratories of Primate Biology, later eponymously renamed the **Yerkes Laboratories of Primate Biology**. This institution became a global center for the study of great apes and monkeys, reflecting Yerkes' unwavering belief in the power of comparative methods to illuminate human psychological processes.

2. Education and Early Research

Yerkes' formal education emphasized a rigorous, experimental approach to understanding the mind and behavior. His training at Harvard under Münsterberg provided him with a solid foundation in the emerging discipline of experimental psychology. During his tenure as a professor at Harvard (1902-1917), Yerkes conducted groundbreaking studies across various taxa, focusing on sensory perception, learning, and motivation. His early works often involved meticulous laboratory procedures designed to quantify behavior objectively, striving to bridge the gap between descriptive natural history and rigorous physiological science.

A significant early contribution was his collaborative work with John D. Dodson, resulting in the formulation of a principle linking physiological arousal and performance. This work, often generalized as the **Yerkes-Dodson Law**, postulated that performance efficiency increases with

physiological or mental arousal, but only up to a certain point, after which performance declines due to excessive stress or high arousal levels. Although the original experiments focused on the relationship between intensity of shock (as motivation) and speed of learning in mice, the concept provided a vital framework for understanding optimal levels of motivation and stress in psychological research and applied settings.

3. Institutional Organization and War Work

The onset of World War I provided Yerkes with an unparalleled opportunity to demonstrate the practical application of psychological science on a massive scale. As President of the American Psychological Association (APA) in 1917, Yerkes took the lead in mobilizing American psychologists for the war effort. He served as a Major (and later Lieutenant Colonel) in the Sanitary Corps, spearheading the effort to devise standardized tests for the classification and assignment of millions of recruits.

This initiative led to the creation of the **Army Alpha** and **Army Beta** tests. Army Alpha was designed for literate recruits and measured verbal ability, numerical reasoning, and general knowledge. Army Beta was a non-verbal test designed for illiterate or non-English-speaking recruits, using pictorial and performance tasks. This effort represented the first widespread use of standardized psychological testing in a military or industrial context, cementing Yerkes' reputation as a powerful organizational advocate for psychology as a vital science capable of solving large social problems. The success, or perceived success, of the Army tests played a crucial role in the subsequent rise of psychometric testing in civilian life throughout the 1920s.

4. Comparative Psychology and Primate Laboratories

Yerkes' enduring legacy lies in his commitment to **comparative psychobiology**, the systematic comparison of behavior across species. He firmly believed that the study of non-human primates, particularly chimpanzees, offered the most direct route to understanding the evolutionary roots of human intelligence, social structure, and pathology. This conviction motivated his post-war efforts to establish a permanent, well-funded center for primate research.

In 1924, Yerkes succeeded in founding the Yale Laboratories of Primate Biology in Orange Park, Florida. This center was revolutionary because it moved beyond simple observational studies, combining controlled experimental environments with long-term behavioral tracking. The facilities housed large colonies of chimpanzees, gorillas, and orangutans, allowing researchers to study complex topics such as tool use, language acquisition (often through sign language experiments), sexual behavior, and emotional development under controlled scientific conditions. Renamed the Yerkes National Primate Research Center after his death, the institution continues to serve as one of the world's foremost facilities for non-human primate research.

5. Intellectual Context and Impact

Yerkes operated during a pivotal period in American psychological history, bridging the gap between the purely structuralist approaches of the late 19th century and the rise of behaviorism and functionalism in the early 20th century. His functionalist perspective, inherited partly from his mentor Münsterberg, focused on the utility and adaptive function of psychological processes. He successfully translated laboratory science into public policy, a move that gave American psychology considerable visibility and funding, particularly in military and educational sectors.

His influence was not solely theoretical; it was heavily institutional. By establishing the nation's premier primate research center, he created a physical and intellectual ecosystem for generations of comparative psychologists, ethologists, and neuroscientists. Yerkes fostered an environment that emphasized interdisciplinary collaboration, drawing on biology, medicine, and psychology to create the modern field of primatology. His impact can be summarized by the successful institutionalization of psychology as both a pure science (through comparative studies) and an applied social science (through testing and military classification).

6. Major Works

Introduction to the Study of the Nervous System (1925)

The Mental Life of Monkeys and Apes: A Study of Ideational Behavior (1916)

A Psychological Examination of the Army, National Academy of Sciences, Vol. XV (1921, co-authored)

Chimpanzees: A Laboratory Colony (1943)

The Great Apes: A Study of Anthropoid Life (1929, co-authored with Ada W. Yerkes)

7. Criticisms and Debates

Yerkes' career, particularly his involvement in applied psychometrics, has been subjected to significant historical criticism. The most prominent debate surrounds the implementation and interpretation of the Army Alpha and Beta tests during WWI. While these tests demonstrated the feasibility of mass testing, the results were often misinterpreted by Yerkes and other psychologists of the time, leading to profoundly flawed conclusions regarding the intellectual capabilities of various immigrant groups and racial minorities. The data were often used to support discriminatory policies, including immigration restrictions, based on the erroneous and culturally biased assumption that the tests measured innate, fixed intelligence rather than educational and cultural background.

Furthermore, Yerkes was associated with the early 20th-century American eugenics movement, a pseudoscience that sought to control human reproduction based on perceived inherited traits. His advocacy for the practical application of intelligence testing was often intertwined with eugenicist

goals of identifying and managing perceived "feble-mindedness." While his contributions to comparative psychology remain foundational, his role in the development and dissemination of scientifically questionable and socially harmful applications of psychological testing represents a complex and troubling aspect of his historical legacy, prompting continuous ethical review of early 20th-century psychometric practices.

Further Reading

[Wikipedia: Robert Yerkes](#)

[American Psychological Association \(APA\) Profile](#)

[Encyclopedia Britannica: Robert Mearns Yerkes](#)

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