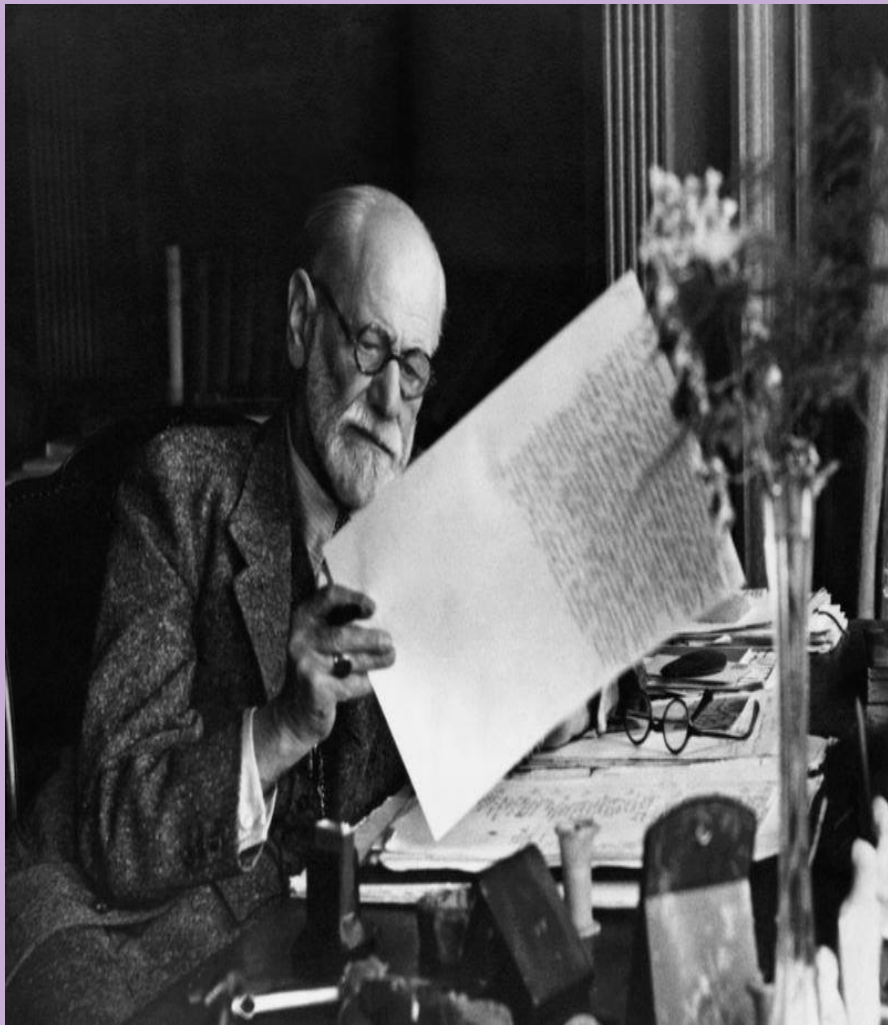


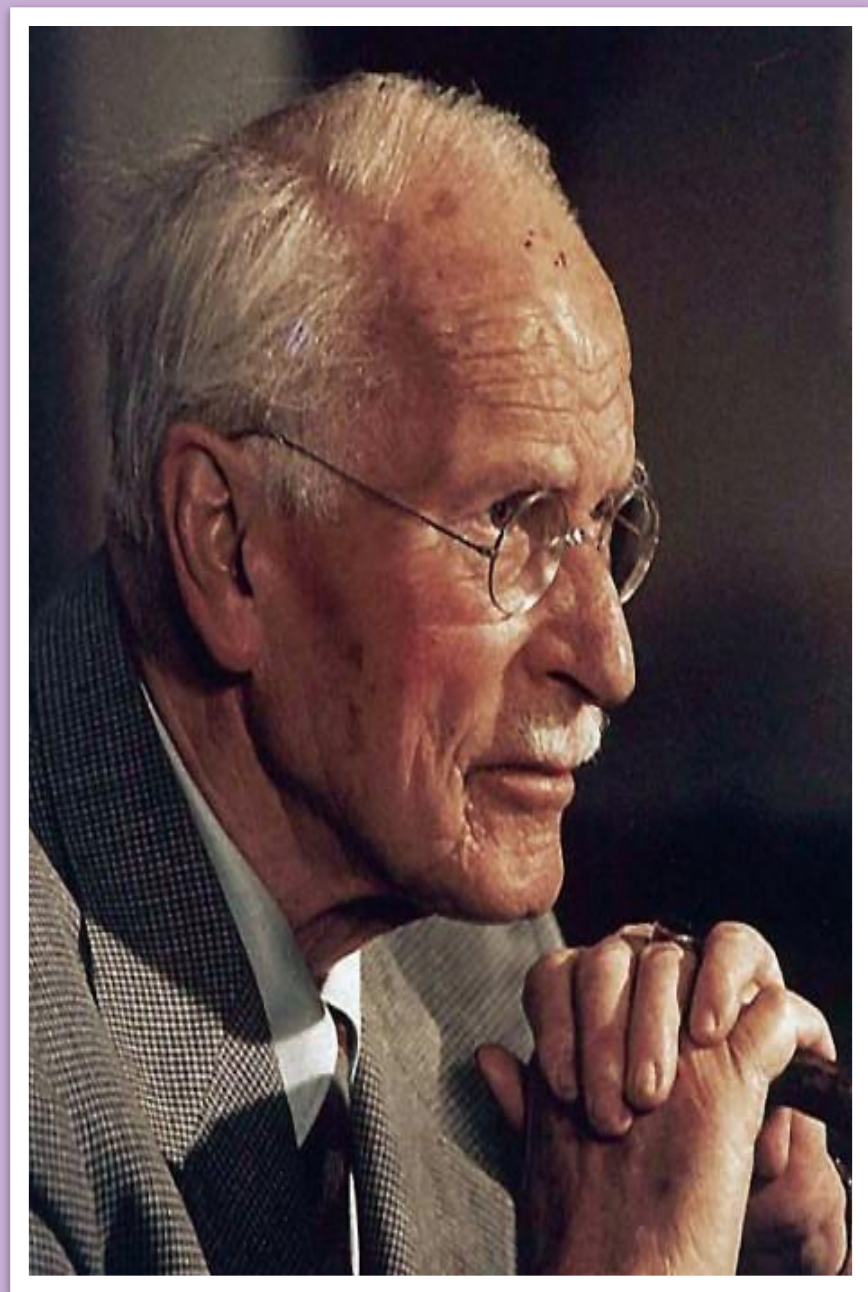


- Wilhelm Wundt
- In 1874 Wundt took up a professorship in Zurich, where he published his landmark textbook, *Grundzüge der physiologischen Psychologie* (Principles of Physiological Psychology, 1874). Moving to a more prestigious professorship in Leipzig in 1875, Wundt founded a laboratory specifically dedicated to original research in experimental psychology in 1879, the first laboratory of its kind in the world. In 1883, he launched a journal in which to publish the results of his, and his students', research, *Philosophische Studien* (Philosophical Studies). Wundt attracted a large number of students not only from Germany but also from abroad. Among his most influential American students were Granville Stanley Hall (who had already obtained a Ph.D. from Harvard under the supervision of William James), James McKeen Cattell (who was Wundt's first assistant), and Frank Angell. The most influential British student was Edward Bradford Titchener (who later became professor at Cornell).



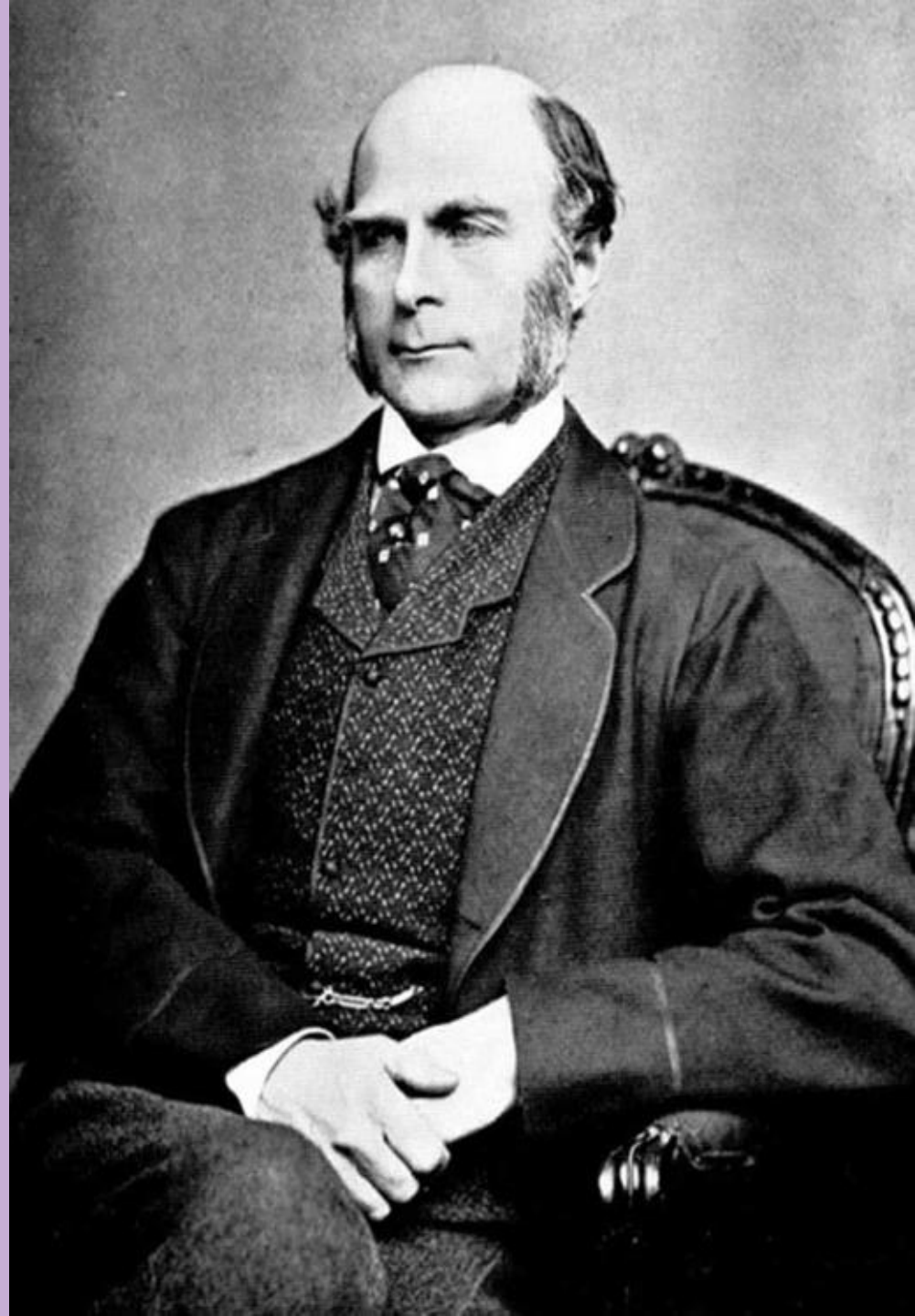


Sigmund Freud Experimental psychology laboratories were soon also established at Berlin by Carl Stumpf (1848-1936) and at Göttingen by Georg Elias Müller (1850-1934). Another major German experimental psychologist of the era, though he did not direct his own research institute, was Hermann Ebbinghaus (1850-1909). Experimentation was not the only approach to psychology in the German-speaking world at this time. Starting in the 1890s, employing the case study (traditional in medicine at the time), the Viennese physician Sigmund Freud developed and applied the methods of hypnosis, free association, and dream interpretation to reveal putatively unconscious beliefs and desires that he argued were the underlying causes of his patients' "hysteria." He dubbed this approach psychoanalysis. Psychoanalysis is particularly notable for the emphasis it places on the course of an individual's sexual development in pathogenesis. Freud based his model of child development on his own and his patients' recollections of their childhood. He developed a stage model of development in which the libido, or sexual energy, of the child focuses on different "zones" or areas of the body as the child grows to adulthood. Although the details of Freud's developmental theory have been widely criticized, his emphasis on the importance of early childhood experiences, prior to five years of age, has had a lasting impact. His psychoanalytic concepts have also had a strong and lasting influence on Western culture, particularly on the arts.



Francis Galton

In 1884, Francis Galton (1822-1911) opened his anthropometric laboratory where people were tested on a wide variety of physical (such as strength of blow) and perceptual (such as visual acuity) attributes. In 1886 Galton was visited by James McKeen Cattell who would later adapt Galton's techniques in developing his own mental testing research program in the United States. Galton was not primarily a psychologist, however. The data he accumulated in the anthropometric laboratory primarily went toward supporting his case for eugenics. To help interpret the mounds of data he accumulated, Galton developed a number of important statistical techniques, including the precursors to the scatterplot and the product-moment correlation coefficient (later perfected by Karl Pearson, 1857-1936).



Gestalt psychology, emerging in Germany in the early twentieth century, was a radical change from the psychology of Wilhelm Wundt who sought to understand the human mind by identifying the constituent parts of human consciousness in the same way that a chemical compound is broken into various elements. It also offered an alternative to the approach of Sigmund Freud, which was complex yet fraught with the complications of psychopathology. This group was not interested in mental illness; they sought to understand the processes of the healthy human mind, and in a scientific yet holistic fashion. They argued that the psychological "whole" has priority and that the "parts" are defined by the structure of the whole, rather than vice versa. Thus, the school was named Gestalt, a German term meaning approximately "form" or "configuration." It was led by Max Wertheimer (1880-1943), Wolfgang Köhler (1887-1967), and Kurt Koffka (1886-1941).

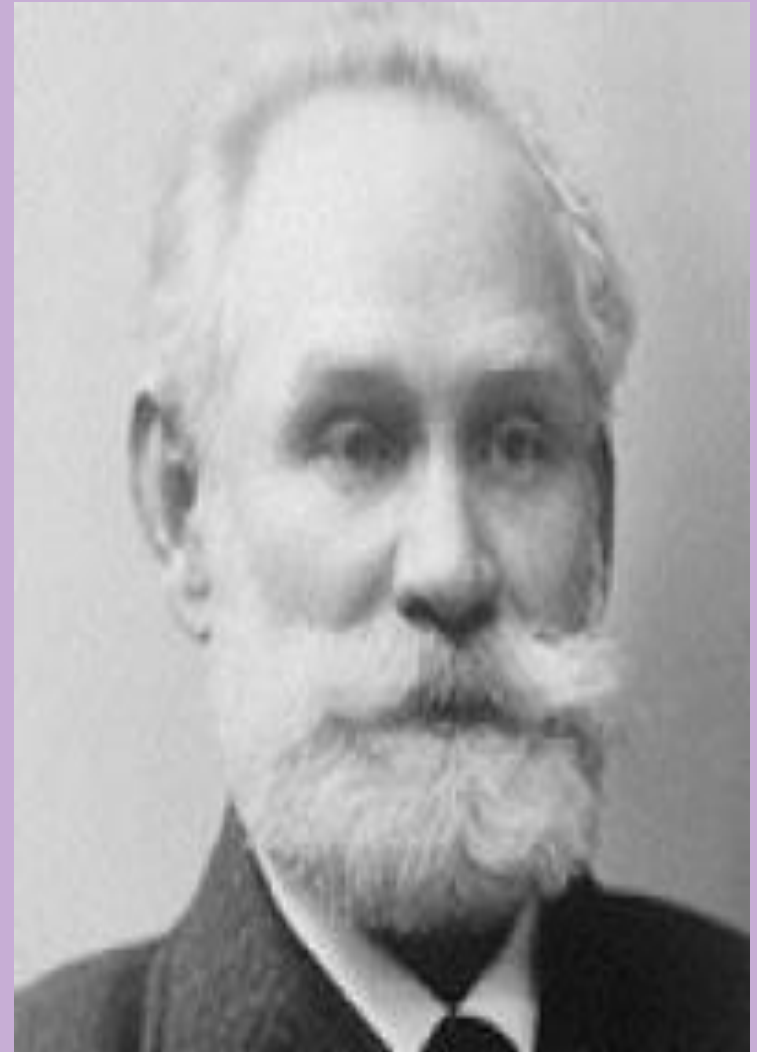


■ Ivan Pavlov

- As a result of the conjunction of a number of events in the early twentieth century, Behaviorism gradually emerged as the dominant school in American psychology. First among these was the increasing skepticism with which many viewed the concept of consciousness: Although still considered to be the essential element separating psychology from physiology, its subjective nature and the unreliable introspective method it seemed to require, troubled many. C. Lloyd Morgan's famous "Canon," stating that higher psychological processes should not be used to explain behavior that can be explained by processes lower on the evolutionary scale without independent evidence of the use of such higher processes on other occasions (Morgan 1894), appeared to support the view that an entity should be considered conscious only if there was no other explanation for its behavior. William James' 1904 article "Does Consciousness Exist?" laid out the worries explicitly; and Robert M. Yerkes's 1905 article "Animal Psychology and the Criteria of the Psychic" raised the general question of when one is entitled to attribute consciousness to an organism.

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A third factor was the rise of John B. Watson to a position of significant power within the psychological community. In 1908, Watson was offered a junior position at Johns Hopkins by James Mark Baldwin. In addition to heading the Johns Hopkins department, Baldwin was the editor of the influential journals, *Psychological Review* and *Psychological Bulletin*. Only months after Watson's arrival, Baldwin was forced to resign his professorship due to scandal. Watson was suddenly made head of the department and editor of Baldwin's journals. In 1913 he published in *Psychological Review* the article that is often called the "manifesto" of the Behaviorist movement, "Psychology as the Behaviorist Views It." There he argued that psychology "is a purely objective experimental branch of natural science," "introspection forms no essential part of its methods..." and "The behaviorist... recognizes no dividing line between man and brute." The following year, 1914, his first textbook, *Behavior* went to press.

■ Humanistic movement

Not all psychologists, however, were happy with what they perceived as mechanical models of the mind and human nature associated with the Behaviorist approach (the "first force"). Nor were they satisfied with the field of "depth psychology" (the "second force") that grew out of Freud's psychoanalytic approach and the work of Alfred Adler, Erik H. Erikson, Carl Jung, Erich Fromm, Otto Rank, Melanie Klein, and others. These theorists focused on the "depth" or unconscious realm of the human psyche, which, they stressed, must be combined with the conscious mind in order to produce a healthy human personality. Humanistic psychology, sometimes called the "third force" in psychology, emerged in the late 1950s with two meetings held in Detroit, Michigan attended by psychologists who were interested in founding a professional association dedicated to a new vision of human development: a complete description of what it is to be a human being, especially the uniquely human aspects of experience, such as love and hope. Thus, they were also dissatisfied with the almost contemporary cognitivist view of the human mind as a computer, just processing information.



