Introduction: The Psychologists' War

At the turn of the twentieth century America's foremost psychologist held out the hope that perhaps the "moral equivalent of war" could be found to redirect human energy away from destructive purposes into more positive channels. William James died in 1910 and thus was spared the experiencing of two world wars that gave the lie to the dream he so eloquently expressed. One can only wonder what his reaction would have been to the fact that those global conflicts were not only fought with the aid of tools provided by his fellow psychologists but that they stimulated and shaped the discipline he did so much to establish.[1]

After modest but steady growth from the late nineteenth century, when it was first introduced into American colleges and universities, the field of psychology boomed after the First World War. Between 1919 and 1939 the number of psychologists grew tenfold, from approximately three hundred to three thousand professionals. The Second World War had an even more dramatic and enduring impact. The psychology community had expanded by another order of magnitude by 1970, with more than thirty thousand professionals registered as members of the American Psychological Association. In 1995, fifty years after the end of World War II, the number of psychologists in the United States was approaching a quarter of a million.[2]

This growth transformed psychology from an emerging academic specialty into a mammoth technoscientific profession in less than a century. It increased the proportion of psychologists in the U.S. population from a mere trace to about one to every thousand inhabitants of the country. In today's world it is difficult to find a person whose life has not been touched, directly or indirectly, by a psychologist. The same could be said for other science-based professions, such as chemistry or

1 William James, *The Varieties of Religious Experience* (New York: Penguin, 1985; orig. pub. 1902), p. 367.
2 U.S. Census, 1990.

medicine, but psychology has been unique in the pace and extent of its growth since the middle of the century. In the wake of World War II, American society witnessed the creation of a virtually new mental health profession – clinical psychology – that owed its remarkable expansion to its close identification with the aims and practices of scientific research in psychology. Hence the scientific and professional dimensions of psychology developed in tandem in the United States.

It is perhaps not surprising that the world wars strongly affected psychology in America. After all, they were events that reshaped modern society around the globe, with far-reaching cultural as well as political effects.[3] Their impact on science was profound. The First World War has been called "the chemists' war" because of the introduction of poison gas as a potent new weapon of mass destruction. Deployed by both sides in the conflict, it raised important ethical issues about the use of scientific knowledge in modern warfare.[4] It also contributed, especially in the United States, to increased federal support of research and development and to new organizations that bound the scientific community in service to the state. The mobilization of American scientists for World War II was even more fateful. The development of the atomic bomb meant that this conflict would go down in history as "the physicists' war."[5] But the bomb had significant psychological fallout as well. Postwar politics ensured the continued reliance on scientific research and technological innovation as the basis for national security. For nearly a quarter of a century the U.S. scientific community prospered as never before, as its fortunes became inextricably tied to the Cold War.[6]

It was not until the war in Vietnam escalated during the late 1960s that the intimate relationship between science and the federal government was called into question by scientists and others. In the ensuing years, federal research and development budgets stopped growing as rapidly as they had been, and in some cases

3 "The Second World War is the largest single event in human history, fought across six of the world's seven continents and all its oceans. It killed fifty million human beings, left hundreds of millions of others wounded in mind or body and materially devastated much of the heartland of civilization." John Keegan, *The Second World War* (Toronto: Key Porter Books, 1989), p. 5.

4 See Hugh R. Slotten, "Humane Chemistry or Scientific Barbarism? American Responses to World War I Poison Gas, 1915–1930," *Journal of American History,* 1990, *77:*476–498.

5 See Daniel J. Kevles, *The Physicists: The History of a Scientific Community in Modern America* (New York: Knopf, 1978).

6 See Paul Forman, "Behind Quantum Electronics: National Security as Basis for Physical Research in the United States, 1940–1960," *Historical Studies in the Physical Sciences,* 1987, *18:*149–229; Stuart W. Leslie, *The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford* (New York: Columbia University Press, 1993).

declined, whereas the number of physical scientists continued to increase, thanks to a productive Ph.D. machine. The biomedical sciences were an exception, however, because of their connections to an expanding health care industry. The social and behavioral sciences, in further contrast, remained largely tied to the fortunes of the academic market.

Psychology continued to burgeon throughout the postwar period, as it proved itself to be enormously versatile and adaptive. As a highly academic subject, it benefited from the rise of the American research university and the expansion of higher education more generally.[7] It had tremendous popular appeal as well, and there was a seemingly insatiable public appetite for psychological facts and techniques. The use of mental tests during the First World War demonstrated how a science-based technology could serve the interests of the government while simultaneously being turned toward professional self-advancement. The Second World War further reinforced that lesson, as psychologists touted themselves as indispensable experts on the "human factor" and focused their technoscientific tools on a vast array of wartime problems.

After that war, psychology capitalized on its manifold identity as a natural science, a social science, and a mental health profession and took advantage of multiple sources of support. Although retaining a strong academic foundation, it was able to develop new occupational niches outside the university in the delivery of mental health services. Scientific research and professional practice flourished together in a symbiotic relationship, as traditional distinctions between pure and applied psychology broke down in the face of demands for social utility.

William James, as a scientist and a scholar, was deeply committed to humanistic ideals. In his efforts to construct a naturalistic science of human nature, he looked first and foremost at evidence derived from personal experience, his own as well as that of others. He also viewed the psychological laboratory as a useful source of information and was among the first Americans to appreciate the scientific revolution that the experimental approach to the study of the mind had wrought in Europe in the late nineteenth century. In his role as a Harvard professor, he made sure that the university was well equipped for experimental research, although he himself lacked the patience and dexterity for such work.

After James published *The Principles of Psychology* in 1890, which established his reputation as America's preeminent psychologist, he became increasingly dissatisfied with the narrow, technoscientific turn the "new psychology" was taking in the United States. In their rush to prove that their work was scientific, he thought

7 See Richard M. Freeland, *Academia's Golden Age: Universities in Massachusetts, 1945–1970* (New York: Oxford University Press, 1992); Roger L. Geiger, *Research and Relevant Knowledge: American Research Universities since World War II* (New York: Oxford University Press, 1993).

that psychologists had become preoccupied with methodological rigor and were losing sight of the larger goals of knowledge. James was more interested in describing the adaptive functions of consciousness than in delineating the structure and contents of the mind and found that philosophy provided a more congenial and supportive environment for the development of his ideas about pragmatism.[8]

James's doubts notwithstanding, laboratory work in psychology burgeoned. By 1900 more than forty academic laboratories had been started in America, and the new psychology was being rapidly professionalized. The laboratory assumed an almost religious significance in this period as psychologists fervently asserted the claims of science in the study of human nature. In the battle for truth, superstition and ignorance were the enemies, to be vanquished by the sharp sword of experiment. Whatever their differences, psychologists shared a fundamental faith in the power of science not only as a means to acquire valid knowledge but as a way of organizing the world.[9]

When James died in 1910 there were only a few hundred individuals professing psychology in the entire United States. But their technoscientific crusade had already begun and was gathering momentum. Psychology, as well as science more generally, received an enormous boost from the global conflict that erupted into the First World War, which demonstrated the continuing failure of Western civilization to discover a moral equivalent to war. Not only did the war generate a myriad of human problems amenable to professional intervention, it provided a rationale for solving them. As citizens and as scientists, psychologists could do no less than contribute their expertise toward the national defense.

But the merging of public duty and professional self-interest had some significant consequences when many psychologists left their laboratories behind and made their work practical. They conducted mental tests on an unprecedented scale, measuring the intelligence, aptitudes, and skills of huge numbers of armed forces personnel. The success of psychology in the war effort thus rested mainly on the correlational approach of the mental testers, not on the experimental protocols of the laboratory workers. Within the profession, the tension between the respective pursuits of knowledge for its own sake and for the sake of utility was often couched in terms of "pure" versus "applied" psychology, with the experimentalists claiming the high ground of science and disparaging work motivated by less lofty goals, despite the fact that the practical work of mental testing had "put psychology on the map" in the first place.

8 See Daniel W. Bjork, *William James: The Center of His Vision* (New York: Columbia University Press, 1988).

9 Ernest R. Hilgard, *Psychology in America: A Historical Survey* (San Diego, Calif.: Harcourt Brace Jovanovich, 1987), p. 31. See also John M. O'Donnell, *The Origins of Behaviorism: American Psychology, 1870–1920* (New York: New York University Press, 1985); James H. Capshew, "Psychologists on Site: A Reconnaissance of the Historiography of the Laboratory," *American Psychologist,* 1992, *47:*132–142.

Following the war the American psychology community grew rapidly, numbering perhaps a thousand professionals by 1929. As the academic labor market became saturated and the Great Depression limited other employment opportunities, the psychology community became increasingly fragmented by the continued influx of new advanced-degree holders. Although behaviorism provided some degree of ideological unity, the discipline was riven with debates over the theory, methods, and goals of psychology. The role of the psychologist was also being redefined, as practitioners sought to enlarge their sphere of influence in a highly academic profession.

What one observer called "the impending dismemberment of psychology" along ideological, organizational, and generational lines was averted by the Second World War.[10] Patriotic duty again became synonymous with professional service, as psychologists suspended their internecine warfare for the duration and once more marched in unison for the common defense of their country. Indeed, the experience of World War II transformed America's psychologists individually and collectively. The profession mobilized itself rapidly and thoroughly, finding places for psychology in a vast assortment of wartime agencies and projects, both military and civilian. Personnel administration, morale, propaganda, man–machine engineering, and mental health were among the areas in which psychologists came to be deployed. Widespread mobilization caused a radical short-term occupational shift that had long-term consequences. Academic psychologists who had spent their time in the laboratory and the classroom with rats and college students suddenly found themselves dealing with real-world problems involving adult human subjects. Serving as technoscientific experts only reinforced psychologists' already strong sense of social purpose. And the dropping of the atomic bomb confirmed their conviction that they had an essential contribution to make toward viable human relations.

This study explores the complex relations that existed among professionalism, science, and ideology in American psychology during the middle of the twentieth century. World War II stands as a watershed in the development of psychological science, when social forces and intellectual trends engendered a major shift in the role of the psychologist. As the professional self-image of the psychologist was transformed, public attitudes and expectations about psychology also changed.

Like all professionals, psychologists sought to define their occupational identity, to control the conditions of their employment, to exercise a monopoly over

10 Heinrich Klüver, "Psychology at the Beginning of World War II: Meditations on the Impending Dismemberment of Psychology Written in 1942," *Journal of Psychology,* 1949, *28:*383–410. See also Franz Samelson, "The 'Impending Dismemberment of Psychology' and Its Miraculous Rescue, 1930–45," unpublished paper delivered at annual meeting of the Cheiron Society, 1988.

their special expertise, and to regulate their ethical standards. As scientists, they wanted to achieve the epistemological goals of certified knowledge and attain the status accorded to members of more established disciplines. What brought these two realms of aspiration together was an ideology founded on the prospects for scientific understanding of human nature and conduct, and harnessed to the project of cultivating a productive symbiosis between the pursuit of psychological knowledge and its applications.

Both world wars were instrumental in the development of psychology as a technoscientific profession. They did more than "prove" that psychology was of practical use; they brought new opportunities and increased resources, moral as well as financial, to the community. They also helped psychologists to think of themselves not only as professional scientists but also as scientific professionals. In many respects the First World War was a dress rehearsal for the Second, as a close relationship with the federal government was reestablished and several key leaders in psychology reprised their roles. But the growth of the psychology community between the wars, along with the greater scale and intensity of World War II, led to correspondingly larger changes in the shape and direction of the discipline.

Psychologists exploited new opportunities to expand their professional roles in the wake of World War II and the field grew at an exponential rate. With secure institutional support and ample resources, psychology exploded intellectually. The introduction of new concepts, techniques, and instruments, some indigenous to psychology and some borrowed from other disciplines, created a dizzying array of research specialties ranging from the biological bases of behavior to the social psychology of small groups. It seemed as if wherever human nature was involved, psychologists were there to analyze and prescribe.

Psychology achieved its identity as a coherent field largely through organizational means, such as standardized college curricula and certified graduate training programs. On an intellectual level, psychology remained heterogeneous and multiparadigmatic. But a deep change was occurring in the epistemological foundations of the discipline as psychologists embraced the reflexive implications of their work. This allowed for the incorporation of personal experience into the realm of science and provided the key to the productive tension between scientific research and professional practice that characterized postwar psychology in America. The result was the creation of a technoscientific system that churned out new knowledge and new psychologists at a prodigious rate and provided the basis for the proliferation of psychological ideas and techniques in American society.

The war launched American psychologists on a highly visible trajectory as cultural authorities on the human psyche. In the postwar decades, scientific psychology flourished as it spawned a huge "helping profession" dedicated to solving all manner of psychological problems. The work of psychologists as diverse as B. F. Skinner, Joyce Brothers, Carl Rogers, and Timothy Leary became well known as they took their technoscientific gospel directly to the public. After the war, psy-

chology was among the fastest-growing fields in America, as science and engineering enjoyed unprecedented support that fueled spectacular growth for nearly a quarter-century.

Just as protecting national security provided the rationale and context for research in physics in postwar America, so the achievement of human potential served as the basis for the production of scientific knowledge in psychology. For psychologists as well as physicists, World War II provided the opportunity and the motivation for a new relationship between their work and American society. By making new ideological and material resources available, the war enabled such technoscientific professions to expand their spheres of influence and shape postwar life in unprecedented ways.

This book is organized as an examination of the causes and consequences of growth in psychology. Fundamentally, it seeks answers to why the field expanded so quickly in the middle years of the twentieth century. It takes as its starting point the history and culture of the psychology profession and tries to ground the analysis in the activities of flesh-and-blood psychologists. I have sought to interpret psychologists' individual or collective behavior as emblematic, providing clues to the larger context of American culture.

The book is divided into several sections. The main narrative begins with three chapters on the legacy of the First World War and its influence as psychologists mobilized for World War II. Chapters 4–7 deal with the activities of psychologists as they sought to make their expertise available during the war itself. The postwar environment for psychology is treated in Chapters 8 and 9. The final two chapters explore the epistemological and cultural consequences of psychologists' wartime experiences. Each section of the narrative is set off by a short interlude that focuses attention on the career of Edwin Boring. These vignettes are designed to show how the collective transformation of the field was reflected in the life of a single individual. In attempting to relate the microcosm of the profession to the macrocosm of society, the book borrows from the traditions of disciplinary history and cultural studies.[11] What follows is an exploration of "the psychologists' war" and its enduring disciplinary, professional, and cultural impact.

11 See, for example: Mitchell G. Ash, *Gestalt Psychology in German Culture, 1890–1967: Holism and the Quest for Objectivity* (New York: Cambridge University Press, 1995); John C. Burnham, *Paths into American Culture: Psychology, Medicine, and Morals* (Philadelphia: Temple University Press, 1988); Deborah J. Coon, "Standardizing the Subject: Experimental Psychologists, Introspection, and the Quest for a Technoscientific Ideal," *Technology and Culture,* 1993, *34*:757–783; Kurt Danziger, *Constructing the Subject: Historical Origins of Psychological Research* (Cambridge: Cambridge University Press, 1990); Gerald N. Grob, *From Asylum to Community: Mental Health Policy in Modern America* (Princeton, N.J.: Princeton University Press, 1991); Ulfried

Geuter, *The Professionalization of Psychology in Nazi Germany* (New York: Cambridge University Press, 1992); Ellen Herman, *The Romance of American Psychology: Political Culture in the Age of Experts* (Berkeley/Los Angeles: University of California Press, 1995); Bruno Latour, *Science in Action* (Cambridge, Mass.: Harvard University Press, 1987); John M. O'Donnell, *The Origins of Behaviorism: American Psychology, 1870–1920* (New York: New York University Press, 1985).

Interlude I

Whether by choice or by chance, psychologists at Harvard University have been making headlines for more than a century. Beginning with William James, author of *The Principles of Psychology* (1890), America's oldest academic institution has harbored a succession of prominent and controversial figures. James, credited with starting the first psychological laboratory in the country, lost faith in the emerging discipline as it became preoccupied with the experimental method in the production of new knowledge. Before abandoning psychology for philosophy, however, he arranged for a major expansion of the Harvard laboratory, including the importation of experimental Hugo Münsterberg from Germany to direct it. Münsterberg, who was hired in 1892 as a representative of the pure research ideal, proved to have equally strong convictions about the importance of applied psychology and became a highly visible proponent of the social utility of psychological knowledge. During the First World War, Münsterberg's outspoken views on the superiority of German culture made him a lightning rod for criticism, and his loyalty was called into question. In 1916, a few months before the United States entered the war, a stroke killed him while he was delivering a public lecture.[1]

Münsterberg's eventual successor was Edwin G. Boring, who became director of the laboratory in 1924 and set out to restore the primacy of experimental work in psychology, at Harvard and elsewhere. Like his predecessors, he became one of America's best-known psychologists. Teacher, historian, and editor, Boring used his Harvard professorship as a bully pulpit to educate one and all about the virtues and vices of his chosen discipline. Nothing if not passionate about establishing psychology on a secure scientific basis, Boring was equally concerned about the professional identity of the field. Over the course of his career he witnessed the spectacular growth of the American psychology community from a small band of

1 Matthew Hale, Jr., *Human Science and Social Order: Hugo Münsterberg and the Origins of Applied Psychology* (Philadelphia: Temple University Press, 1982).

academic specialists into a virtual army of scientific professionals and allied technical workers. He also lived through several paradigm shifts, as psychologists abandoned the introspective study of the mind in favor of behaviorism and then, later on, joined the "cognitive revolution" that transformed the behavioral sciences.

Boring's career spanned nearly six decades, including twenty-five years as director of the Harvard psychological laboratory. He had begun as a prolific and versatile experimenter and then turned to historical scholarship. His reputation rested on his massive and erudite book, *A History of Experimental Psychology,* published in 1929. Deeply involved in professional affairs, Boring served as a leader in the country's main professional organization, the American Psychological Association, and was an active participant in the elite Society of Experimental Psychologists. In all of his myriad efforts on behalf of psychology, Boring aspired to be what he called a "commanding servant" – one who could exercise benevolent authority because of a total identification with the interests of the whole group.[2]

By the end of his life Boring had become one of the "great men" of contemporary American psychology. He was known throughout the professional community and by the public at large for his pithy pronouncements on all matters psychological. Having erased the boundary between his private life and his public role, Boring virtually embodied the ongoing search for professional identity that had engaged psychologists, both individually and collectively, during the twentieth century. In the vignettes that follow, Boring's life and work will be used to reveal in microcosm the forces and events that shaped American psychology.[3]

In the late spring of 1914, Edwin Garrigues Boring was awarded a doctorate from Cornell University in the young science of psychology. Fewer than 350 students had ever received such a degree in the United States. Twenty-eight years old, the ambitious Quaker-Moravian from Philadelphia had already begun to prove himself as a productive experimenter. He had been trained by Edward Bradford Titchener, the prominent leader of the structuralist school of thought and a leading advocate of the academic ideal of pure research.

Boring first encountered Titchener in 1905 when he was an undergraduate engineering student at Cornell. Remembering the lectures in elementary psychology as "magic," Boring went on to complete his engineering degree in 1908.[4] After a year of work in a steel mill and another as a high school teacher, Boring returned to Cornell intending to pursue a master's degree in physics. But the encouragement

2 Edwin G. Boring, in *A History of Psychology in Autobiography,* vol. 4 (Worcester, Mass.: Clark University Press, 1952), pp. 27–52, quote on p. 51.

3 As one of his students noted, "Boring's identity was his bedevilment." Saul Rosenzweig, "E. G. Boring and the *Zeitgeist: Eruditione Gesta Beavit,*" *Journal of Psychology,* 1970, *75:*59–71, quote on p. 69.

4 Edwin G. Boring, *Psychologist at Large* (New York: Basic Books, 1961), p. 18.