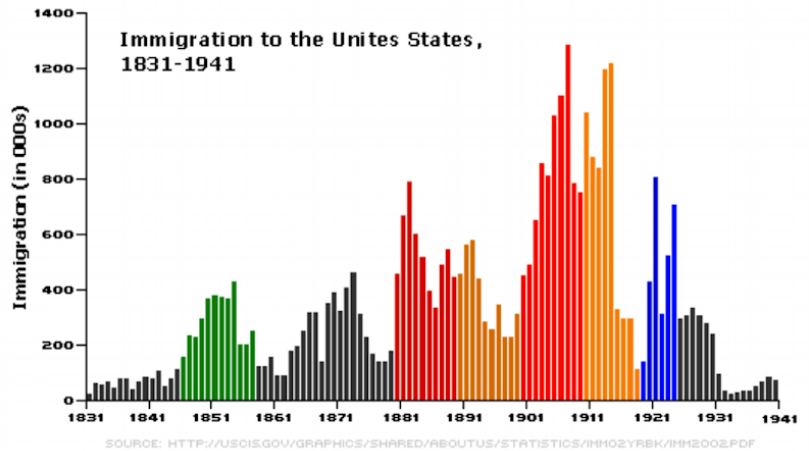


Psychological Research & The Standard Model (1920-1970)
The Rise of Experimental Psychology in Its Historical Context & The Experimental Story
 Hevern (2023)

At its most simple, this tale is about how social scientists, mostly in psychology (because I know about them best) but also from other fields, extended the 19th century's vision of scientific advances to problems of the 20th century. These scientists were buoyed by the apparent success of applied advances in science and engineering as well as a deepening belief that experimental techniques and quantitative analyses were revealing the underlying blueprint or structure of the material world. Adopting either a ***mechanical*** or ***organic metaphor*** for their overall conception of the world (Pepper, 1942), these scholars assembled what might be called the "standard model" for how social science should be conducted. ***This model relied upon an extension of the methods used in the laboratories of the natural sciences to include systematic study of human beings as research "subjects"*** (Danziger, 1985, 1990, 1997). They agreed with the empiricist commandment ***that nothing scientific should be accepted as true unless objective evidence had conclusively demonstrated any hypothesized statement of fact.***

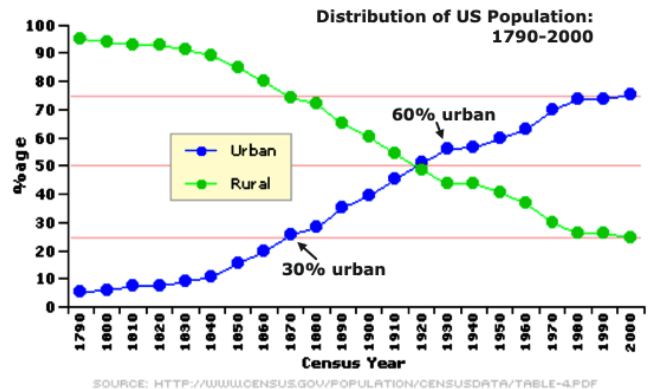
A. *Immigration to US: 1870s-1910s.*

The pace of change across the States had quickened by the turn of the 20th century. Industrial growth in America relied upon a vast stream of immigrant laborers who had arrived in a second great wave from the 1880s through 1914 (an earlier peak came with the Anglo-Irish and German immigration of the 1840-50s; Note 1). These new Americans, though, brought with them the languages and customs of Eastern and Mediterranean Europe rather than the littoral of the North Sea. With a longstanding Anglo-Saxon majority, America needed to integrate these recent migrants but found this a more difficult task than previously .



B. *Urbanization of US (rural->cities): 1870->1930*

As the U.S. reached for recognition as a world-class power both politically and economically, its industrial growth prompted a second, internal migration as rural areas found important segments of its own population gradually moving to the cities already teeming with immigrants. In 1870 only about 25-30% of Americans lived in urban settings; that proportion doubled to half the population by 1920 and approached three-quarters by 1970



C. *Industrial development & need for efficiency, social management & control*

By the end of the first decade following the Great War (that is, at least by 1930), experimental psychology had already established a predominant role in research universities and had begun to

enchant the popular imagination (as well as that of corporate America) with its prowess and usefulness. The succeeding generation of social scientists -- first formed by the discouraging advent of the Depression (1929) and the rise of Fascism in Europe (1920s-1930s) and tempered by the demands of the Second World War (1939/41-1945) -- extended their control across the academic world.

While psychoanalytic practices had made important inroads among urban intellectuals of the East and West Coasts of the U.S., experimentalism in psychology and its applied cognates (social psychology, psychological testing, industrial psychology, etc.) had won pride of place in most institutional settings. The classical behaviorism of the early Pavlov and J. B. Watson was supplemented, even superseded by the persuasive theory and experimental data of B. F. Skinner and his colleagues in their advocacy of operant behaviorism. The industrial world had already turned to applied psychologists in the 1920s to understand their workers and to enhance the productivity of their labor. Even earlier, psychologists had begun to detail effective methods of advertising and public relations.

World War II made urgent demands upon psychologists to help mobilize, classify, and train the 12 million men who eventually entered the armed forces and millions of others in the civilian sector who also contributed either to defense industries or government agencies. Additional contributions by psychologists included rumor control and morale building on the home front as well as propaganda and "psyops" countermeasures in the theaters of war and occupation.

The post-War period after 1945 brought with it yet another set of challenges (Cushman, 1990, 1995): these included demobilization and restoration of civilian life with its "baby boom" of 1946 through the mid-1960s, **both suburbanization and the socioeconomic decline of cities in the Northeast and Midwest, the need for sufficient consumer demand to sustain suitable levels of economic production, and answers to long-ignored cries for redress of grievances arising from segregation, socioeconomic inequality, and the absence of civil rights among Black Americans and other minorities. In some fashion, the almost "adolescent" America of the beginning of the century now had to function as an adult and faced crises which it could no longer duck as it might once have done.** The demands for new approaches to social management and control in the second half of the century were met by a continuing reliance upon earlier scientific strategies.

But, as I'll argue in the next few classes, there was a growing sense of disconnect between the demands of post-War American life and the ability of social science to respond to those demands by using those approaches. At the crux of the dilemma lay the weakness of the scientific program as a comprehensive solution to the kind of human and social needs which technological innovation, international sociopolitical transformation, and the rapidity of social change presented. This judgment does not dismiss the benefits of science which altered the quality of life in the 20th century in many positive ways nor does it hold that the social and clinical sciences at mid-century contributed little. But these sciences generally failed to address the embeddedness of human persons in specific historical and sociocultural matrices -- actual people in their real lives. Rather, they continued to rely upon mechanical or organic models of individuals and society which were incapable of solving the problems they were meant to address

1. The Experimental Laboratory

- Eight US psych labs before 1890 (Harvard, Johns Hopkins, U Penn, Clark, U Chicago...). A total of 86 colleges and universities in the United States and Canada had functioning psychology labs before 1920 (Garvey, 1929)
- Emphasis on **controlled conditions** for research on sensation/perception & animal behaviors; division into **researchers vs. subjects (or participants); variables**, factors studied **independent of context in actual world**

2. Logical Positivism & Operational Definitions

- Logical positivism/empiricism & principle of verification

Comte's positivism was transformed in the early 20th century into a philosophy of science called *logical positivism or logical empiricism*. An early voice which influenced the development of this philosophy belonged to Ernst Mach (1838-1916). **Mach held for a radical form of empiricism and argued for sensations as the basis of all human knowledge. He rejected all forms of metaphysical thinking and believed that scientific laws were simply summaries of experience.** Influenced by Mach and others, a group of theoreticians (philosophers, scientists, and mathematicians) gathered informally in Vienna, Austria (the **Vienna Circle** [der Wiener Kreis]) to argue about the nature of science and philosophy. Between 1922 and 1932, they formulated a series of propositions about the grounding of valid knowledge. ... **the Circle proposed there are only two types of knowledge: logical analysis and empirical experience.** The statements of logic and mathematics could be proven true a priori. However, all other statements of truth -- including those developed within the natural and social sciences -- must be derived from experience **and required empirical verification.** This standard demanded that any statement of scientific knowledge could not be accepted as true unless it had either been verified experientially or could, at least in principle, be so verified. The logical positivists dismissed all traditional metaphysics and other forms of philosophical speculation as meaningless. The proponents of the logical positivist or empiricist school specifically rejected any distinction between the natural and social sciences and held that the search for meaning (Verstehen) in the social sciences as Dilthey and others suggested was ill-founded

- **Operational definitions:** The object of psychological research (concepts or notions such as intelligence, depression, extraversion, prejudice, etc.) is synonymous with means or methods of measuring it. The score on a test or quantity in an experiment IS equal to the concept or notion.

The proponents of the logical positivist or empiricist school specifically rejected any distinction between the natural and social sciences and held that the search for meaning (Verstehen) in the social sciences as Dilthey and others suggested was ill founded (Schwandt, 2001). Such a position appeared to be congruent with the thesis, advanced by Harvard University physicist, Percy W. Bridgman (1882-1961) in his 1927 volume, *The Logic of Modern Physics*, regarding "operational definitions." As Green (1992, p. 294) summarizes,

[Bridgman's] basic thrust was to eradicate all abstract concepts by tying them to the specific operations by which they are measured. **In the words of Bridgman, 'we mean by any concept nothing more than a set of operations; the concept is synonymous with the corresponding set of operations'** (1927, p. 5, original italics).

The entities investigated by the physical sciences such as mass, length, and velocity were meaningful only insofar as investigators coupled their discussions to the concrete methods of their research itself. Psychologists in the 1930s found *operationism* to be a compatible standard for an experimental science like psychology. For much of the 20th century, social science found that **an operational definitions was the concrete expression of the scientific method itself.** This belief is one which graduate students in North American schools after the 1920s heard repeatedly in research methods classes: **one must explicitly demonstrate the use of empirical, observable means to explore any psychological construct.** Hence,

"depression" might be operationally defined as a score from 0 to 63 on the Beck Depression Inventory or "anxiety" the electrical potential shown by a galvanic skin response (GSR) psychogalvanometer or "love" the sum of responses across 15 items using a 7-point Likert scale. In my own second year of graduate study in the late 1970s, one professor opened a research methods course by saying, "If it cannot be measured, it does not exist. This is the underlying axiom of all psychological knowledge."

3. Applying Social Science

a. Psychological Testing

- Gave a number to "intelligence" & "scholastic aptitude" independent of context

b. Industrial Psychology

- Scientific management; matching workers to jobs
- Study of worker productivity and how to increase it, e.g., Elton Mayo's study of women workers at the Hawthorne factory in Cicero, IL in the early 1930s.

c. Advertising

- Study of consumer behavior & motivation (Walter Dill Scott, 1869-1955).

In Scott's theory of advertising, it was considered important that the consumer remember the ad if they were expected then to purchase a product in a story. So, the means for successful ads followed four principles: *repetition*, *intensity*, *positive associations*, and *ingenuity*. Advertising should be frequent, contain vivid images, employ well-known or liked persons or other images, and show a certain cleverness of style. The use of either humor or visual symmetry in a specific advertisement can enhance memory even more. Scott believed that the most effective product promotions somehow made an appeal to basic human instincts like safety or nurturance.

- Behavioral analysis in business (J B Watson); Edward Bernays (Freud's nephew) & applied Freudian theory to sales (e.g., getting women to smoke by linking smoking to thinness) and public relations
- Marlboro: "Tattooed Man" (1950s-1960s) & "Cowboy/Marlboro Country" (1960s) as most effective campaign in advertising history: applied psychological theory.



Arguably the most well-known advertising campaign in 20th century America began in 1955 when Marlboro cigarettes hired the Leo Burnet advertising agency. For years, Marlboro had been promoted as a woman's cigarette. Its slogan from 1924 onward had been "Mild as May." But, by the early 1950s, this unfiltered cigarette and its company were losing sales, battered by reports of health risks, and on the verge of financial collapse. A filtered version of the cigarette, repackaged in a vivid red and white box, was introduced by the Leo Burnet Agency with a new campaign, the "Tattooed Man," which featured a group of rugged, hypermasculine figures. Sales of the cigarette grew 5000% within 8 months of the campaign's start. Research soon showed that consumers responded most positively to images of a cowboy and, by the early 1960s, Marlboro adopted this icon as its own. The owner of Marlboro, Phillip Morris, invited television viewers and billboard readers to (re-)enter the mythical American West by way of "Marlboro Country." By 1992, Marlboro had become the most valuable brand in the world with an estimated value of US\$32 billion (Kluger, 1996). Walter Dill Scott would have had little problem recognizing his psychological principles of advertising in this endeavor.

