

from Robert W. Rieber (Ed.). (2012).

Encyclopedia of the History of Psychological Theories

New York: Springer. 1228 pages in 2 volumes

ISBN 978-1-4419-0425-6

www.springer.com/psychology/book/978-1-4419-0463-8

Industrial-Organizational Psychology

HAROLD TAKOOSHIAN

Fordham University, New York, NY, USA

Industrial-Organizational (I-O) Psychology is defined simply as "psychology applied to work" (APA 1971). It studies "work" in its broadest sense, including paid and unpaid effort, recreation, and any purpose-driven effort (sports, hobbies). Compared with other specialties, I-O is more "applied" – putting practice above theory, since it typically aims to solve specific problems, increase efficiency, and maximize outcomes.

For over a century, I-O psychology consists of four distinct sub-areas, each with its own history: (1) *Personnel*: fitting the individual to the current organization, using psychological tests and other methods to assess job applicants or current employees. (2) *Organizational*: fitting the organizational structure to its current individuals, through organizational development (OD) or other restructuring methods. (3) *Consumer behavior*: strengthening the organization's effective two-way communication with the outside world – both outward (advertising) and inward (market research). (4) *Human factors* (or ergonomics): adapting the physical environment to fit the worker, through diverse means – such as office architecture, equipment design, work schedules. Each specialty within I-O psychology has its own historical origins (Benjamin and Baker 2004) (see Table 1).

Personnel psychology is the oldest and once-largest specialty. It dates from 1890, when James McKeen Cattell (1860–1944) coined the term "mental tests." After raising this possibility to quantify individual mental abilities, Cattell soon devised 10 sensorimotor tests to select graduate students for his program at Columbia University; 30 years later, Cattell founded the Psychology Corporation in 1921, which still continues to apply psychological assessments to improve

Industrial-Organizational Psychology. Table 1**Background of I-O psychology**

1879 – Wilhelm Wundt “founds” the science of psychology, forming the first psychology lab in Leipzig
1890 – Columbia professor J.M. Cattell coins the term “mental test” in the journal <i>Mind</i> , and suggests 10 perceptual-motor tests which, by 1894, are part of Columbia’s procedure for selecting psychology students for admission
1901 – On December 20, W.D. Scott lectures on “The psychology of selling” to a group of Chicago businessmen. This popular idea quickly grew into four books starting with <i>The Theory of Advertising</i> (1903)
1911 – “Scientific management” arrives in F.B. Gilbreth’s <i>The Brick-Laying System</i> and F.W. Taylor’s <i>The Principles of Scientific Management</i>
1913 – At Harvard’s Laboratory of Applied Psychology, Prof. Hugo Munsterberg’s popular <i>Psychology and Industrial Efficiency</i> also sells applied psychology to industry
World War I – Psychologists and their new tests are called upon for selection and training of 1,700,000 military recruits. Their efforts proved enormously successful
1927–1939 – Psychologists and engineers conducting the “Hawthorne studies” document the importance of informal social relations among workers. This 12-year study of <i>Management and the Worker</i> (Roethlisberger and Dickson 1939), led to the “human relations movement”
World War II – Again, 2000 psychologists are recruited by the US military to develop new areas of I-O expertise: training, placement, and human factors
1971 – The APA Task Force report on the practice of psychology in industry
1987 – The industrial psychology group, which joined APA as its Division 14 in 1943, incorporated in 1987 its own Society for Industrial-Organizational Psychology (SIOP), now semi-autonomous of both APA and the then-new APS
2010: SIOP members considered changing its name, then voted to keep it

industrial and other organizations. This specialty took a huge step forward in 1917–1921, when a team of military psychologists was charged to develop new group ability tests to quickly assess thousands of the 1.7 million recruits drafted into service for World War I. In the 1920s, their work developing both verbal and nonverbal tests was seen as hugely successful, to

quickly match soldiers with assignments. Over the decades, psychology in industry burgeoned, to the point where in 1971 the American Psychological Association released an APA task force report focused on the growth and special challenges of what it now re-named “I-O” psychology.

Today personnel psychologists are charged with many tasks, all assessing the individual to better fit into the organization. This includes job analysis (the duties of a specific job), performance appraisal (how well the individual or unit is performing), recruitment of new employees, selection and placement of job candidates, training, job design, safety, and personnel decisions.

Organizational psychology originated in the pioneering work on “scientific management” around 1910 by Frederick W. Taylor (1856–1915) to make US industry more competitive. Later, the classic “Hawthorne studies” conducted in the Western Electric plant in Hawthorne, Illinois, in 1927–1939 documented how workers’ feelings toward their employer impact their performance – maintaining that it is the wise employers who make their workers’ satisfaction a goal alongside productivity. These Hawthorne studies were later debunked as flawed, but not before launching a powerful “human relations movement” (HRM) in US industry. In 1960, Douglas McGregor (1906–1964) published his classic HRM manifesto entitled “The human side of enterprise” (McGregor 1960). This “O” in I-O surpassed personnel as the largest I-O specialty after the 1950s, due to many factors – the massive growth in the size and complexity of US corporations, as well as the growth of service (versus production) workers from 20% to 80% of the US work force.

Today, organizational psychologists try to adapt the organization to fit its current employees on two levels: (1) management psychology, focused on diverse ways to improve leadership; (2) human relations, focused on diverse ways to motivate employees in general. Some key topics in organizational development are: worker motivation, satisfaction, person-environment fit, employee attitudes surveys (EAS), organizational citizenship behaviors (OCB), burnout, payment/benefit systems, stress, employee assistance programs (EAP), training and development.

Consumer behavior originated back in 1901 with an immensely popular series of pre-Christmas lectures to a group of Chicago businessmen on “the psychology of

selling" by Walter Dill Scott (1869–1955), which quickly became a book *The Theory of Advertising* (Scott 1903). Starting in the 1930s, psychoanalyst Ernst Dichter (1907–1991) introduced "Motivation research," probing the unconscious factors in consumer attitudes. After World War II, war-time research on propaganda, along with the growth of corporations in general and Madison Avenue advertising in particular, led hundreds of psychologists into consumer research and practice.

Today, psychology's role has waned in consumer behavior, and is divisible into two specialties. (1) *Advertising* focuses on the effectiveness of the organization's outward communication – to the public, policy-makers, and others. (2) *Market research* focuses on the accuracy of inward communication into the organization from the outside – the public, policy-makers, and others. For example, Sony Electronics conducts market research to learn what new products the public desire so that it can design them, then advertises to draw the public toward these new products. Because of their training in methodology (experiments, surveys, statistics), psychologists are now far more involved in marketing, leaving advertising more to non-scientists. Moreover, in large corporations, there is typically a healthy tension between these two functions, since the role of the marketing department is to objectively assess the impact of the advertising department.

Human factors originated in the pioneering work around 1910 by F.W. Taylor and his colorful colleagues Frank B. Gilbreth (1868–1924) and his wife Lillian Gilbreth (1878–1972). This couple pioneered "time-motion" research which revolutionized the ancient craft of brick laying, and was initially welcomed by labor unions as much as management for gains in work efficiency. The Gilbreths wrote "Cheaper by the dozen," applying their efficiency methods to run a 12-child household, and in 1984 Lillian became the first psychologist to be honored with a US postage stamp. During World War II, ergonomics advanced apace with the need for pioneering new methods to develop "person-machine" systems, to maximize the safety of complex new equipment – airplanes, submarines, and other new devices.

Today, ergonomists are involved in diverse ways to harmonize workers with their physical environment: time-motion analysis, operator-machine systems,

workspace design, open architecture offices, safety and accident-reduction.

Compared with other fields of psychology, I-O psychology today has several features: (a) *Small*: I-O is a small specialty, including just 5% of US psychologists. (b) *High-employment*: Since I-O is in high demand in the industry; it has a negative unemployment rate below zero. (c) *Lucrative*: I-O has long had the highest salary, averaging at least 25% higher than 14 other psychology specialties. (d) *Separate*: I-O has become a very separate specialty within psychology, with its own independent association since 1987 – the Society for I-O Psychology (SIOP). (e) *Hybrid*: I-O overlaps with business and other social sciences. (f) *Credentials*: There is no one credential to define who is an I-O psychologist – be this a M.A., M.S., M.B.A., Ph.D., Psy.D., state license, APA or SIOP membership, or ABPP Diploma. (g) *Demographics*: SIOP members today are 6% ethnic minorities, 37% female, only 26% licensed, and 85% have a doctorate. I-O work settings vary greatly – employees in large firms, small "boutique" consulting firms, professors in psychology or business programs, or solo-practitioners.

Several useful volumes offer different overviews of I-O psychology. Riggio (2008) offers a textbook for students and novices. Jones et al. (1991) offer a practical handbook for managers to find research-based solutions to common questions. Dunnette and Hough (1990–1994) offer the definitive four-volume handbook of I-O psychology. There are also numerous web resources on I-O psychology (www.siop.org), *human factors* (www.hfes.org), *human resources* (www.hrny.org), and *the many divisions of psychology in general* (www.apa.org/about/divisions).

Today, I-O psychology faces several challenges – such as globalization of organizations, the increased diversity of the US workforce, increased regulation by government and labor law, and the changing nature of work. These same challenges make a science-based I-O psychology more indispensable to successful organizations.

References

- American Psychological Association (APA). (1971). *Effective practice of psychology in industry: Task Force on the practice of psychology in industry. American Psychologist*, 26, 974–991.
- Benjamin, L. T., & Baker, D. B. (2004). *From séance to science: A history of the profession of psychology in America*. Belmont, CA: Wadsworth.

- Dunnette, M. D., & Hough, L. (Eds.). (1990–1994). *Handbook of industrial-organizational psychology*. Palo Alto: Consulting Psychologists Press.
- Jones, J. W., Steffy, B. D., & Bray, D. W. (1991). *Applying psychology in business: Handbook for managers and HR professionals*. Lexington: Lexington Books.
- McGregor, D. M. (1960). *The human side of enterprise*. New York: McGraw-Hill.
- Riggio, R. E. (2008). *Introduction to industrial-organizational psychology* (5th ed.). Upper Saddle River: Prentice Hall.
- Roethlisberger, F. J., & Dickson, W. J. (1939). *Management and the worker*. Cambridge: Harvard University Press.
- Scott, W. D. (1903). *The theory of advertising*. Boston: Small, Maynard, & Co.
- Zedeck, S. (Ed.) (2011). *APA Handbook of industrial-organizational psychology*. Washington, DC: APA.

Irwin, Orvis

HARRIS WINITZ

University of Missouri-Kansas City, Kansas City,
MO, USA

Orvis Irwin received his Ph.D. in psychology from Ohio State University in 1929, and as a professor of psychology at the Iowa Child Welfare Research Station,

beginning around 1945, he initiated a series of studies on the speech sound development of infants. This period of language development, often referred to as the babbling stage, had been given only limited attention in biographical accounts of the psychosocial development of infants. As electronic recording was not available at the time Irwin's investigations were conducted, Irwin began his research by establishing a system of examiner reliability. Large numbers of infants were included in each of his meticulously conducted investigations which reported the growth of the sounds of English-speaking infants from birth to 30 months. The results of these investigations served as the basis for descriptive and theoretical accounts of speech sound development and provided a foundation for later investigators when electronic sound recording, speech sound spectrography, and X-ray technology were available and when comparisons could be made among infants from a variety of linguistic communities and when the effect of various stimulus conditions could be assessed.

References

- Irwin, O. C. (1947). Infant speech: Consonantal sounds according to place of articulation. *Journal of Speech Disorders*, 12, 397–401.
- Irwin, O. C. (1948). Infant speech: Development of vowel sounds. *Journal of Speech Disorders*, 13, 31–34.