

BRANCHES OF PSYCHOLOGY

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Summary

The branches of psychology primarily addressed in this topic article are those whose foundations and applications are especially pertinent to facilitate informed actions toward sustainable world development. They capture much of the scope of contemporary psychology but do not encompass all branches.

Most standard modern definitions of psychology describe its essence as the science of behavior. One broad tradition of psychology is rooted in philosophy and other areas of the humanities. In many regions of the world, the foundation of psychology has shifted to a “natural” or “hard science” focus. A point of convergence among the branches of modern psychology is the acceptance of psychology as a science based on a common

adherence to conceptual clarity, methodological rigor, and the dissemination of knowledge.

Classification has presented a daunting challenge to the discipline. As well as the complexity of the subject matter, psychology is both a natural science and a social science with the emphasis varying with the branch and theoretical orientation. Meaningful classification in psychology compels considerable differentiation. A contemporary articulation of generic categories is presented.

Modern psychology is largely associated with the empirical study of behavior. Psychological research has relied largely on three methodological frameworks: direct observation of behavior, introspection (e.g. self-report), and specialized techniques such as neuroimaging. Because of the scope and complexity of the phenomena studied by psychologists, it is unlikely that a single methodology would ever be appropriate.

Psychology's evolution as a science as well as an applied profession has generated interest in ethical issues and standards with implications for all branches, fields of research, and applied practice. Expectations of ethical behavior, generic frameworks for understanding ethical principles, ethical decision making, contextual aspects of ethics, and codes of ethics for psychologists are discussed.

There is a description and summary of current contributions of the branches (cognitive, developmental, clinical, counseling, health, educational and school, applied social, organizational, and work) retained for their particular congruence with sustainable development. The relationship of the branches of psychology to other disciplines is considered. The focus is on philosophy, physiology, the neurosciences, medicine, education, and the social sciences. The article concludes with a brief assessment of potential future contributions and policy considerations.

1. Introduction

All authors of the hundreds of textbooks written as introductions to psychology have been confronted by a common initial question: how to organize the contents in a coherent and comprehensive manner? That there is no single answer accurately reflects psychology's scope and diversity.

The initial question, therefore, compels an immediate second question: what is the purpose of the text? For our purposes, the answer is clear. The branches of psychology receiving the most attention in this topic article and in the following articles are those that are especially pertinent to the goal of the *Encyclopedia of Life Support Systems* to present the foundations and applications for informed actions toward sustainable world development. Hence, the branches focused on in this topic capture much of the scope of contemporary psychology but they do not encompass either all its branches or their content.

This framework determined the greater emphasis placed on some branches than on others. Nonetheless, before reviewing these branches, it remains important to consider the historic evolution of the discipline, the ways in which psychology is classified and

other main branches of psychology as well and to consider methodology and ethical issues as elements common to all branches. Then, after presenting the branches retained for their particular congruence with sustainable development and their relationship to other disciplines, the future and policy considerations will be briefly discussed.

2. Historic Evolution

The great diversity found among the branches of psychology is anchored in the complexity of the human organism and of the social systems that humans have created. Most standard modern definitions of psychology describe its essence as the science of behavior. As a distinct scientific discipline, psychology's history is short, barely more than a century. However, the mind has been a subject of preoccupation, conjecture, and investigation throughout recorded human history across all cultures and societies. Nonetheless, there have been different approaches.

One broad tradition is rooted in philosophy and other areas of the humanities. In this context, it is especially the philosophical treatments of the mind that are seen as the antecedents of psychology in general and of some current branches of psychology in particular. This tradition has variations in most of the societies spanning world cultures and regions that developed an organized body of knowledge. The perspective each generated may have had particular links to broader features of the culture but the focus on the mind as an entity that determined and mediated individual and collective experience is common. The philosophical core of psychology remains evident in the approach of some psychological theories to the study of psychology.

In many regions of the world, the foundation of psychology has shifted to a “natural” or “hard science” focus. These roots are more to be found in biology and physiology. This approach spawned new methods that accord special attention to experimentation and empirically derived data. The laboratory as a setting that enables research under controlled circumstances is especially favored although well-defined field studies continue to be conducted. The establishment of Wundt's Laboratory of Psychology in 1875 heralded the first university-based laboratory dedicated to psychology as a distinct field of scientific inquiry. Its work was closely related to previous work on human perception conducted by physiologists. Psychology's rapid expansion in the twentieth century was largely driven by the growth of new knowledge generated by the empirical approach to science.

There are multiple conceptual frameworks and theoretical orientations through which the actual study and application of psychology is advanced. A point of convergence among the branches of modern psychology is the acceptance of psychology as a science. Whatever the particular method and scientific tradition may be, there is a common adherence to conceptual clarity and methodological rigor as well as the dissemination of knowledge in a spirit of open inquiry and constructive criticism.

3. Classification

Given the diversity and scope that characterize psychology, it is not surprising that classification has presented a daunting challenge to the discipline. As a science, it is

both a natural science and a social science. Natural science research in psychology, reflecting its historic roots in physiological psychology, is particularly related to biological science. Biological psychology concentrates on the relationship between behavior, including mental processes, and biologically based phenomena. Social science research in psychology encompasses a wide range of individual behavior as well as the relationships between individual processes and social behavior and social systems. Depending on the branch and theoretical orientation, the focus may be on individual differences, constants across situations and cultures, or on variances in individual behavior and social relationships across cultures.

In many countries, how psychology is classified has major implications for the research funding it receives. Where the natural and social sciences are both regarded as sciences, the funding tends to be better. Where the social sciences are placed with the humanities, it fares less well. This relates not only to the general under funding of the humanities. The very nature of the methodology of much research in psychology requires investment in equipment that is unknown in the other humanities disciplines. The optimal situation is the one found in Canada where psychology is the only discipline eligible for funding from the three national research councils supporting research for the medical sciences, natural–engineering sciences, and the humanities–social sciences. Particular branches funded by one area still fare better or worse than branches funded by another area. However, in a particular area, the discipline is at least competing with others who share generally similar requirements for the effective conduct of their research.

One solution has been to divide the branches into two categories—foundational and applied—a distinction sometimes expressed as scientific and applied. However appealing this may be, it risks creating the impression of a false dichotomy. All areas that generate psychology’s knowledge base (“foundations”) have applications to individual or social issues. Similarly, there is no legitimate application in psychology without a scientific base. Therefore, meaningful classification in psychology compels greater differentiation.

It is possible to strive for broad categories that capture common generic characteristics. Two recent examples illustrate how this can be achieved. The XXVII International Congress of Psychology (Stockholm, 2000), under the auspices of the International Union of Psychological Science (IUPsyS) had a scientific program of 680 sessions that were organized according to 28 topics and 151 sub-topics.

4. A Quick Overview of the Branches of Psychology

The quadrennial congress was also the occasion for the release of the *International Handbook of Psychology*, a product of the IUPsyS publications program. The handbook’s organizational structure provides an excellent illustration for the comprehensive inclusion of traditional and more recently established branches. It is the basis for the following summary overview.

4.1. Foundations and Methods of Psychology

- Basic methods in psychological science
- Behavior in the social context
- Psychology in biological perspective

4.2. Information Processing and Human Behavior

- Conditioning and the experimental analysis of behavior
- Consciousness and conscious experience
- Emotions
- Knowledge acquisition and use in higher-order cognition
- Memory processes
- Motivation
- Neurobiology of learning
- Psychology of language
- Sensation–perception, information processing, attention

4.3. Social Processes and Behavioral Development

- Developmental psychology (prenatal to adolescence; adulthood and aging)
- Comparative-evolutionary psychology
- (Cross) cultural psychology
- Personality and individual differences
- Social processes and human behavior

4.4. Applied Psychological Science

- Psychological assessment and testing
- Clinical psychology
- Psychology in education and instruction
- Health psychology
- Contributions of psychology to peace and nonviolent conflict resolution
- Psychology as a profession
- Applied social psychology
- Work and organizational psychology

4.5. Psychology in Transdisciplinary Contexts

- Theoretical psychology
- International psychology
- Psychological science in cross-disciplinary contexts

While not all psychologists would agree fully with the means of classifying the branches and fields of psychological endeavor adopted by the *International Handbook of Psychology*, it reflects a distinctly contemporary articulation of generic categories and nicely captures how the branches are evolving. One of these is the emerging emphasis

on multidisciplinary research and applied service delivery. Because of its current importance and its implications for the future, this issue is further addressed later.

Among the innovative characteristics found in the categorization created by the handbook is the grouping it created in the section on Information Processing and Human Behavior. It demonstrates the importance of several branches traditionally associated with biological psychology (e.g. memory; sensation–perception) and their conceptual and operational link to the foundations of modern neuroscience. The topics themselves capture how these sub-fields actually focus on issues and problems (e.g. knowledge acquisition and use in higher-order cognition; neurobiology of learning).

5. Methodology (see **Methods in Psychological Research**)

The way information or data is acquired to generate new knowledge, that is, methodology, has been at the center of much debate within and among the branches. Every science must adopt its own methodology; it is a fundamental element to all sciences. Psychology is no exception; each branch has methodological issues with which it must grapple. The philosophy of science has helped all sciences to be informed that their methods derive from particular conceptualizations of science itself.

Modern psychology is largely associated with the empirical study of behavior. During the twentieth century, as the empirical approach took hold, psychological research relied largely on three methodological frameworks.

The direct observation of behavior is not only associated with behaviorism as a theoretical orientation. It remains important to most branches, although the particular means of data collection do vary. Neurophysiological and neuroanatomical methods are, of course, important to the branches focused on brain function. In cognitive psychology and neuropsychology as well as across the neurosciences generally, specialized techniques such as neuroimaging are rapidly taking a central place. Introspection, of which self-report is an example still used in research, was originally central to the branches associated with biological psychology. After falling into disfavor because of problems with generalizing from the experimental setting to real-life events, it reemerged albeit with more precise parameters and limits to contribute to data collection to some of the branches regarded as especially important to sustainable development (e.g. cognitive psychology and health psychology). Because of the scope and complexity of the phenomena studied by psychologists, it is unlikely that a single methodology would ever be appropriate. However, further adaptations, some of which may be sufficiently differentiated that additional methodologies will emerge, will remain essential to all branches. Indeed, they even contribute to the generation of new branches.

The empirical tradition and its particular philosophy of science has been the major intellectual framework for most branches of psychology including those that will be described in greater detail here and in the accompanying articles. However, there are other traditions found in a few branches. One that has spawned a considerable body of inquiry is associated with phenomenological psychology. Others may be characterized variously, among other descriptors, as post-positivist and postmodernist. A common

characteristic among them is attention to issues of subjectivity and meaning. While the methodological focus is typically interpretive, some research utilizes qualitative analysis, if they rely to any extent at all on empirical data collection.

The application of feminism to psychology is sometimes included under the rubric of these other approaches, particularly those who regard them all as dissenting from the psychological mainstream. However, as a distinct field, it brings a conceptually based approach to the study of psychological phenomena generally and to a critique of some of the established branches, especially those that have been important in applying psychological knowledge to the solution of individual and social problems.

6. Ethical Issues across the Branches of Psychology

Psychology's evolution as a science as well as an applied profession has generated interest in ethical issues and standards with implications for all branches and fields of research and practice. Indeed, it is one of the hallmarks of a mature discipline that it develops and promulgates a distinct code of ethics and standards of practice. Ethical principles and related standards are a defining characteristic of virtually all sciences and human service professions. Most established at least a basic formal code of ethics during the twentieth century. This was initially concentrated in the industrialized countries of the West but since 1950 many other countries have also adopted ethics codes for scientists working with human subjects and for human service professions (see *Ethics and Legal Matters*).

6.1. Expectations of Ethical Behavior

The level of attention ethics now receives in advanced education in psychology as well as from practitioners, scientists, policy makers, regulators, and the general public is nonetheless relatively new. Interest and concern about ethics was generated both in the profession and from the broader world. Following the Nuremberg trials at the conclusion of World War II, the international community, the public, academics, and practitioners all recognized the importance of according greater attention to ethical issues. Of particular importance is the capacity of psychologists in all branches of psychology to recognize and appropriately resolve ethical dilemmas that arise in the conduct of research and in the application of psychological knowledge to human problems.

6.2. Generic Frameworks for Understanding Ethical Principles

There are also generic frameworks for understanding ethical principles across various branches and theoretical orientations. Work on ethics usually begins with a set of broad aspirational principles that seek to capture the collective wisdom of the discipline. Most codes of ethics contain this dimension. At this level, there is likely to be the most commonality across the branches and sub-fields of psychology. However, scientists and practitioners also require operational rules and guidelines. Content ethics typically state correct and unacceptable practices. As ethical codes in psychology have evolved, many now contain such content ethics as well as the aspirational principles from which they are derived. Sometimes, they are presented in two versions, with the principles found in a code of ethics and the operational expectations entitled standards.

Values underlie all ethical principles and standards of practice. Until recently, the values base was not explicitly stated in most codes and standards. However, there is increasing recognition that this is an essential element that should be made manifest in each document. This also facilitates an understanding of differences related to cultural and ideological specificity as well as of the commonalities that transcend the branches of psychology, culture and social systems, national identity, and political orientation.

6.3. Ethical Decision Making

Applied ethics is of interest to all branches of psychology. The public interest also compels psychologists not only to accept certain ethical principles, but also to be aware of what is expected of them in their research and delivery of services. Furthermore, they must be able to resolve the dilemmas that arise in all psychological endeavors. Hence, an additional transcending element is the capacity to reach ethical decisions. This is an active process in which general principles, specific standards, and values are applied to situations that require psychologists to arrive at a judgment about the appropriate course of action. The most challenging situations are those characterized by ambiguity or in which a choice based on one principle or expectation appears to contradict another option based on another accepted principle or expectation.

6.4. Contextual Aspects of Ethics in Psychology

Each branch of psychology has certain ethical issues of special pertinence. Sometimes, the issues are particular to a theoretical orientation. For example, the growth of behaviorism in the mid twentieth century led to concerns about the conditions and limitations that should be respected in collecting experimental data and offering treatments based on the theories and methods associated with “behavior modification.” Adherence to a particular psychological theory may be more important to how psychologists view ethical issues than to the larger branch of psychology of which they are part. For example, developmental psychologists and clinical psychologists both working in a cognitive theoretical framework are often more likely to regard some ethical issues more similarly than do their respective colleagues working in a social systems framework.

The societies in which psychologists pursue their endeavors are also important arbiters of the relative importance given to certain ethical principles and expectations. Some cultural traditions and political ideologies place the individual at the center of ethical decision making while others compel a more collective sense of responsibility.

Across theoretical orientations, cultural traditions, and political ideology, psychologists in all branches are increasingly expected to weigh ethical decisions by assessing all pertinent factors, including codified ethics and regulatory standards as well as prevailing personal, client–patient–subject, and social values. This includes assumption of responsibility for the decision and continuing evaluation of outcomes.

6.5. Codes of Ethics for Psychologists

In an international context, there is greater probability in the foreseeable future that cross-cultural or multinational attempts to create common ethical codes will achieve some success at the level of broad generic principles and in developing frameworks to enhance ethical decision making. Over the twentieth century, especially during its second half, codes of ethics were developed by national associations of psychologists as well as regulatory bodies in countries that adopted laws to govern psychological practice. These have been supplemented by specific standards adopted in branches of psychology or more typically in certain theoretical orientations. Even the latter, however, have often been the product of national associations. Only more recently have there been concerted multinational efforts to establish common ethical principles and standards. These are sometimes referred to as meta-codes. So far, this has been more successful at the regional or continental level.

The most definitive outcome has occurred in Europe with the adoption in 1995 of a Meta-Code of Ethics by the European Federation of Professional Psychologists Associations (EFPPA). In North America, a similar goal has been established and an action plan adopted by the Trilateral Forum on Psychology Education, Practice, and Credentialing. Both EFPPA and the Trilateral Forum unite the major national organizations of psychology on their respective continents. An international, multinational or cross-cultural meta-code of ethics offers fundamental principles that can guide psychologists across the various branches of psychology as well as across national traditions and cultures. It is clear that national codes and specialty standards in the sub-fields of psychology will continue to address values and principles specific to their context.

In the most extensive comparison of psychological ethical codes to date, in 1997 Leach and Harbin compared the ethical codes of professional psychological associations in 23 countries to the current code of ethics of the American Psychological Association (APA). They found that the principles governing ethical conduct in the U.S. appeared in 70.2% of the other codes examined. Ten standards approached universal use, defined as standards that appeared in the codes of 75% or more of the countries examined. These were (1) avoiding harm; (2) avoidance of false or deceptive statements; (3) boundaries of competence; (4) confidentiality; (5) delegation to and supervision of subordinates; (6) disclosure; (7) exploitative relationships; (8) fees and financial arrangements; (9) informed consent to research; and (10) informed consent to therapy.

Although these standards were consistently found in most codes, over 36% of the U.S. standards appeared in three or fewer of the other countries' codes. The principles containing the most non-equivalent standards were: teaching, training, and supervision; research and publishing; and forensic activities. It was hypothesized that some of these standards may appear in the laws of the countries in question, or that they were included in the American code in order to reduce the probability of legislative action. Notwithstanding a subsequent reanalysis that yielded further common categories, Leach, Glossoff, and Overmier found that almost two-thirds (63%) of the countries had specific ethical standards that could not be placed in their new categories.

The Trilateral Forum has identified “cultural competence” as an especially important factor in the development of meta-codes. Globalization is an increasingly important feature in several regions, including Europe and North America. The rapid growth of electronic communications has also demonstrated the potential for psychological research and services to be delivered virtually as well as *in vivo*. The potential for new types of ethical dilemmas is certain.

Whatever the risks and limitations, it is probable that psychology will be part of the global trend toward greater cross-border research and service delivery. This makes the challenge of developing common ethical principles all the more pertinent and timely. The current state of ethical codes and standards as well as the emerging development of meta-codes of ethics for psychologists are sources of optimism for enhancing all branches of psychology.

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Pierre L.-J. Ritchie, Ph.D. (Duke University), is full professor in the School of Psychology at the University of Ottawa, Canada. He is secretary-general of the International Union of Psychological Science and executive director of the Canadian Register of Health Service Providers in Psychology, the profession's major national credentialing body, as well as having held numerous leadership positions in Canada, the USA, and internationally since 1978. He remains an active clinician and clinical teacher and contributes regularly to work on ethics, health care, and public policy issues.

Jean Grenier, Ph.D. (University of Ottawa) is director of training in psychology at the Hôpital Montfort and clinical professor in the School of Psychology, University of Ottawa. His current research interests include the differential diagnosis of chronic insomnia as well as issues related to professional training in psychology. Dr. Grenier is credentialed by the Canadian Register of Health Service Providers in Psychology. Dr. Grenier also maintains a part-time private practice offering psychological services and consulting. His clinical interests focus on the treatment of chronic insomnia, trauma, anxiety, and mood disorders, as well as the psychological management of chronic illnesses.