

What Sigmund Didn't Know: The Many Faces of Psychology Today

The two articles that follow survey recent trends and developments in the discipline of psychology, now more than a century old and diverse beyond even the fertile imaginings of Sigmund Freud, the pioneer whose work first established for the public the importance of healing the mind. Notably, the name of Freud is absent from our two surveys. In the words of the title of one article, the discipline of psychology has moved far beyond the couch and the paternalistic model of counseling. Christopher Koch and David Jones make clear that psychology has become wedded to high tech research methods, medicine, and issues of public policy. The art of understanding and healing the mind is now an imposing science as well.

Beyond the Couch: Psychology Meets Biology

David K. Jones

All of us, in many ways, are psychologists. Is there anyone who is *not* fascinated by human behavior and who does not try to explain the sometimes weird and wacky actions of our fellow human beings? Anybody following the headlines sees and hears about a great deal of seemingly inexplicable behavior.

People do terrible things. They hate and kill each other. Parents abandon their children. Members of Congress and presidents lie. But people also do wonderful things. They give to charities to help the poor and indigent. Parents love and sacrifice for their children's welfare. Members of Congress and presidents engage in the highest political debate and deliberate the world's future in remarkably statesmanlike ways. On the cutting edge of their discipline, psychologists attempt to explain this spectrum of human behavior.

Many people continue to regard psychology as a discipline in which bearded men write notes while a patient lying on a couch recites childhood traumas. Few realize that psychologists are behavioral *scientists* employing the latest scientific methods. So what's currently happening in the discipline?

Probably the most important and intriguing current development is the continuing discovery and promulgation of biological causes of behavior, including evolutionary factors, brain processes, hormones, and genetics. Once a unified science, psychology has long been fractured into a number of subdisciplines, including such areas as abnormal, cognitive, developmental, learning, personality, and social psychologies.

Throughout the history of psychology, grand theories have been used to explain behavior. In recent years, evolutionary theory has similarly been applied, albeit with great controversy. Basically, evolutionary psychologists argue that the behavioral adaptations necessary to survive over the millions of years of human evolution have led to selection of certain traits and behaviors that we continue to see in contemporary humans.

Much current psychological research employs the evolutionary model. Recently, for instance, Bell has applied the evolutionary model to explain parental caregiving while researchers in developmental psychology such as Geary and Bjorklund and Pellegrini have begun to understand

children's behavior through the lens of evolution. Child aggression and attachment to parents and other caregivers may be due to biological structures that developed during human evolution. Other psychologists such as Kirkpatrick, Russ, and Buss have argued that the evolutionary model helps explain everything from personality to religious choices.

Social processes such as attraction and mating have recently provided fertile ground for research employing the evolutionary approach. Authors such as Buss, Fisher, and Gangestad and Simpson have argued that the choices we all make of dating and marriage partners are due, at least in part, to historically successful choices our ancestors made. Thus, a quality like physical attractiveness, because it was a sign of reproductive health, is still prized as a quality in today's society. One study recently found that women's hair quality is significantly correlated with health and may serve as a sign of reproductive potential. Men may be more attracted to women with nice-looking hair as a result! Even more recently, Kellett and Gilbert have suggested that people with acne tend to feel shame because they are concerned about their decreased attractiveness to others, which damages chances to mate and extend the life of their genes.

Researchers in abnormal psychology have also recently been busy studying the usefulness (some would say the necessity) of the evolutionary model in trying to understand such disorders as anxiety and depression. For example, Wilson argues that at some point in history, manic-depressive behaviors may have led to an evolutionary advantage by keeping enemies at bay, though such behaviors are non-advantageous in current environments. Oehman and Mineka have recently argued that brain structures are activated in a number of long-conditioned fear situations (such as fear of being physically injured because of a threat to one's survival). Thus, everyday anxieties may have an evolutionary basis. Hardly a new insight, this biological version of the "fight or flight" syndrome does provide a theoretical basis for understanding common conceptions of fear.

Additionally, the evolutionary model may be helpful in explaining other behaviors of people in trouble, such as suicides. R. M. Brown and colleagues have found some evidence that people who are more likely to attempt suicide are those whose own existence may reduce the likelihood of their kin reproducing. Ironically, instinct tells them their suicides may increase the chances of their family's genes surviving in the overall pool because their kin, no longer needing to take care of them, now have the chance to reproduce. Future studies may show that depression has a similar genesis as a survival technique.

Thus, evolutionary psychological approaches are being used to explain a wide variety of psychological phenomena. Saad and Gill argue that the evolutionary model should be applied even to marketing. In their theory, consumer choices are presumably influenced by brain structures and processes that had some evolutionary advantage thousands of years ago. Why do we spend millions of dollars as a nation to improve our appearance? Evolutionary psychology may help us to explain why. We want to look good so that someone else will mate with us to produce babies. But to make this happen, we first must buy the cosmetics, firm up our bodies at the health club, and/or get the facelift! Thus, advertisers may be wasting their time. We pay an outrageous price for those new tight jeans because of ancient biological drives imbedded in our first "pair of genes."

In spite of considerable research in this direction, evolutionary psychologists have hardly won the day. Other psychologists are suggesting that the evolutionary model does *not* adequately explain much behavior. For instance, Eagly and Wood, defending their "social structural model," have argued forcefully that sex differences believed by evolutionary psychologists to originate in different adaptation needs for survival can be better explained by social and cross-cultural causes. Such arguments are the hallmark of any reputable science. It may be noted that a study on gender differences in personality traits across cultures, published in the August 2001 issue of the *Journal of Personality and Social Psychology*, finds results that contradict *both* the evolutionary and social structural models.

The impact of biology on psychological research goes beyond the evolutionary model, of course, and includes exciting discoveries about how our minds work. Though psychologists have

long known that brain functioning affects human and animal behavior, only recently have methodologies been established to study these factors. Medical techniques such as MRIs, PET (Positron Emission Tomography), and CAT scans are being used in psychological research to study speech organization (Staudt et al.) and reading (Gaillard et al.). In an even more surprising application, magnetic resonance imaging (fMRI) technology is used to study brain processes at work during interaction with spouses and friends—for the purpose of understanding how close relationships fit in the larger field of social psychology (Aron et al.).

Other researchers have used fMRIs to study brain processes during the dual act of driving and using a cell phone. They found that brain activity does *not* double when a person attempts to do two activities at the same time. Thus, the brain may not be able to help the person focus on both driving and talking on the phone, and may, in fact, compromise the ability to perform either act (Just et al.).

Brain scanning is being used for understanding radically different behavior in less trendy ways too. R. L. Solso is using fMRI technology to study how people understand art. In a highly publicized study, A. Raine and colleagues used PET scans to examine the burning of glucose in the brains of murderers. They determined that these subjects showed less brain activity in the right orbitofrontal cortex of the brain than non-criminal control subjects, hinting at the importance of brain activity in violent behavior. Specifically, this study suggests that people who don't turn to crime may have higher levels of nervous system processing, which in turn may indicate enhanced attentional or emotional processing, enabling them to examine morals or values or to evaluate the possible consequences of their actions. In other words, violent people may be prevented by malfunctioning brains from making moral choices.

Thus, medical technology is being adapted to study a wide variety of psychological processes, and the research has only just begun. It has the potential to help humans develop new ways of handling information and also has important implications for the treatment of diseases (Myslinski).

Along with studies of how the brain affects behavior, researchers have begun to examine genetic causes of mental health.

Philosophers and psychologists have long debated the “nature-nurture” problem. At one time, many psychologists had little time for biological causes of behavior (nature), particularly genes, believing that environmental factors (nurture) were much more important. Research in fields such as developmental, personality, and social psychology, however, argue for important genetic components of behavior. For example, a recent study suggests that genetic factors affect children as they try to cope with divorce (O'Connor et al.). Other researchers have found that genetic factors can predict various attitudes people have toward life, particularly toward the preservation of life, equality, and athleticism (Olson et al.). Thus, processes thought to be strictly environmentally and psychologically determined a short time ago are now known to have important genetic causes as well.

With the recent mapping of the human genome by members of the Human Genome Project and Celera Genomics, psychologists are likely to begin to study the microscopic biological causes of behavior. Because human behavior is so complex, though, psychologists are unlikely ever to determine that behaviors such as love and aggression are determined by a single gene. A more likely finding is that a number of different genes working together influence such behavior. At the same time, researchers are also likely to examine how the environment influences behavioral expression of genes.

Although biological factors clearly play a much larger role in human behavior than psychologists of other eras would have cared to admit, ongoing research reaffirms the important role of environmental factors. For example, DeAngelis has recently reported on two large-scale studies in major American cities that discuss how neighborhoods affect the well-being of children. Thus, psychologists must continue to take social and cultural factors into account when explaining behavior.

Many psychologists continue to insist that social, psychological, and cultural factors play a much more important role in behavior than do biological factors. Increasingly, though, most psychologists argue for an “integrationist” model and insist on studying the interactions of biological, environmental, and psychological factors on behavior. Perhaps the best example of this is the continuing fascinating research into the relationship between psychological factors and medical ones.

In recent years, psychologists and medical researchers have studied in earnest how psychological factors affect heart disease and cancer and how these diseases influence behaviors such as coping. For example, one study concludes that depression, stress, and poor social support are risk factors for the progression of cardiovascular disease (Sher), while others have found that depression, hostility, and anger are also risk factors for cardiovascular problems (Rutledge et al.). Despite lack of unanimity on the issue, psychologists are excited about the prospects of such links between emotions and heart disease. One new study on psychological intervention as a means of reducing the chance of second heart attacks has been hailed as “a landmark” in the field, promising a major role for psychology in the medical field (Carney, qtd. in Clay 2).

Perhaps the most exciting current development in the ongoing study of the relationship between psychological and biological factors is the emerging field of psychoneuroimmunology (PNI). PNI is the study of how psychological factors affect immune systems, and therefore healthy, functioning bodies (Passer and Smith). Psychoneuroimmunologists such as Cacioppo and Ader suggest that stress can make people more susceptible to illness, largely due to reduced effectiveness of the immune system. In a particularly interesting study, chronic stress is linked to deleterious effects on the immune system and actual changes in brain functioning (McEwen).

These studies predict that psychological interventions may be helpful in modulating immune system functioning. The jury is still out on how effective such interventions can be (Miller and Cohen). Nevertheless, a wide body of emerging literature portends an increasing role for psychological factors in the dynamics of prevention.

The current trend of using biological models to explain behavior and the use of psychological models to explain biological phenomena is only likely to grow in the next decade. As researchers in emerging fields like fMRI, psychoneuroimmunology, and behavioral genetics refine their techniques, researchers will continue to improve their knowledge of human behavior.

In the early days of the “talking cure,” Freud and his colleagues endured the scorn of the scientific community as they promised a new kind of healing. At the beginning of the 21st century, with science and technology enhancing its traditional methods, psychology offers the hope of even greater things. Indeed, if psychologists can heal the mind so that the body can survive or prevent diseases like heart attack and cancer, then they have taken the discipline to places unimagined even by the revolutionary Dr. Freud.

Works Cited

- Ader, R. “Psychoneuroimmunology.” *Current Directions in Psychological Science* 10.3 (2001): 94-98.
- Aron, A., D. Mashek D., and G. Lewandowski. “The Use of fMRI (Brain Imaging) in Personal Relationship Research.” Paper presented at the Annual Meeting of the International Network on Personal Relationships. Prescott, Arizona. 2001.
- Bjorklund, D. F., and A. D. Pellegrini. “Child Development and Evolutionary Psychology.” *Child Development*, 71.6 (2000): 1687-1708.
- Brown, R. M., et al. “Evaluation of an Evolutionary Model of Self-Preservation and Self-Destruction.” *Suicide and Life-Threatening Behavior* 29.1 (1999): 58-71.
- Buss, D. M. “The Evolution of Happiness.” *American Psychologist* 55.1 (2000): 15-23.
- . “Sexual Strategies Theory: Historical Origins and Current Status.” *Journal of Sex Research* 35.1 (1998): 19-31.
- Cacioppo, J. T. “Autonomic, Neuroendocrine, and Immune Responses to Psychological Stress.” *Psychologische Beitrage* 42.1 (2000): 4-23.
- Clay, R. “Research to the Heart of the Matter.” *APA Monitor* 32.1 (2001): 1-2.
- DeAngelis, T. “Movin’ on Up?” *APA Monitor* 32.7 (2001).
- Eagly, A. H., and W. Wood. “The Origins of Sex Differences in Human Behavior: Evolved Dispositions Versus Social Roles.” *American Psychologist* 54.6 (1999): 403-23.

- Fisher, H. "Lust, Attraction, Attachment: Biology and Evolution of the Three Primary Emotion Systems for Mating, Reproduction, and Parenting." *Journal of Sex Education and Therapy* 25.1 (2000): 96-104.
- Gaillard, W. D., et al. "Cortical Localization of Reading in Normal Children: An fMRI Language Study." *Neurology* 57.1 (2001): 47-54.
- Gangestad, S. W., and J. A. Simpson. "The Evolution of Human Mating: Trade-offs and Strategic Pluralism." *Behavioral and Brain Sciences* 23.4 (2000): 573-644.
- Geary, D. C. "Evolution and Developmental Sex Differences." *Current Directions in Psychological Science* 8.4 (1999): 115-20.
- Just, M. A., et al. "Interdependence of Non-Overlapping Cortical Systems in Dual Cognition Tasks." *Neuroimage* 14.2 (2001): 417-26.
- Kellett, S., and P. Gilbert. "Acne: A Biopsychosocial and Evolutionary Perspective With a Focus on Shame." *British Journal of Health Psychology* 6.1 (2001): 1-24.
- Kirkpatrick, L. A. "Toward an Evolutionary Psychology of Religion and Personality." *Journal of Personality* 67.6 (1999): 921-52.
- McEwen, B. S. "The Neurobiology of Stress: From Serendipity to Clinical Relevance." *Brain Research* 886.1-2 (2000): 172-89.
- Miller, G. E., and S. Cohen. "Psychological Interventions and the Immune System: A Meta-Analytic Review and Critique." *Health Psychology* 20.1 (2001): 47-63.
- Myslinski, N. R. "The Future of the Brain." *The World and I* (2001): 152-59.
- O'Connor, T. G., et al. "Are Associations Between Parental Divorce and Children's Adjustment Genetically Mediated? An Adoption Study." *Developmental Psychology* 36.4 (2000): 429-37.
- Oehman, A., and S. Mineka. "Fears, Phobias, and Preparedness: Toward an Evolved Module of Fear and Fear Learning." *Psychological Review* 108.3 (2001): 483-522.
- Olson, J. M., et al. "The Heritability of Attitudes: A Study of Twins." *Journal of Personality and Social Psychology* 80.6 (2001): 845-60.
- Passer, M. W., and R. E. Smith. *Psychology: Frontiers and Applications*. Boston: McGraw-Hill, 2001.
- Raine, A., J. Stoddard, S. Bihrl, and M. Buchsbaum. "Prefrontal Glucose Deficits in Murderers Lacking Psychosocial Deprivation." *Neuropsychiatry, Neuropsychology, and Behavioral Neurology* 11.1 (1998): 1-7.
- Russ, S. W. "An Evolutionary Model for Creativity: Does it Fit?" *Psychological Inquiry* 10.4 (2001): 359-61.
- Rutledge, T., et al. "Psychosocial Variables Are Associated With Atherosclerosis Risk Factors Among Women With Chest Pain: The WISE Study." *Psychosomatic Medicine* 63.2 (2001): 282-88.
- Saad, G., and T. Gill. "Applications of Evolutionary Psychology in Marketing." *Psychology and Marketing* 17 (2000): 1005-34.
- Shapiro, S. L. "Quality of Life and Breast Cancer: Relationship to Psychosocial Variables." *Journal of Clinical Psychology* 57.4 (2001): 501-19.
- Sher, L. "Psychological Factors, Immunity, and Heart Disease." *Psychosomatics* 41.4 (2000): 372-73.
- Solso, R. L. "The Cognitive Neuroscience of Art: A Preliminary fMRI Observation." *Journal of Consciousness Studies* 7.8-9 (2000): 75-85.
- Staudt, M. "Early Left Periventricular Brain Lesions Induce Right Hemispheric Organization of Speech." *Neurology* 57.1 (2001): 122-25.
- Wilson, D. R. "Evolutionary Epidemiology and Manic Depression." *British Journal of Medical Psychology* 71.4 (1998): 375-95.

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Psychology in the New Millennium: An Overview of Current Trends

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Several myths about the status of psychology have emerged in recent years. For instance, one asserts that fewer scientific psychologists graduate with doctoral degrees than ever before. However, B. D. Fowler indicates that the number of graduating scientific psychologists has

actually increased over the last twenty-five years. Significantly, the rate of growth is greater in the area of applied psychology than in others because, as Fowler points out, those areas, underdeveloped until recently, are quickly “catching up.”

In fact, the application of psychology has created greater opportunities for psychologists. Being a psychologist no longer means only clinical or academic work. Psychologists today are presented with a wide variety of careers. The February 2001 issue of the *Monitor on Psychology* offers an excellent summary of different areas of employment. In that issue, twenty-one psychologists are highlighted in careers ranging from marketing analyst to Internet developer to director of various interest organizations. Another useful resource is the *Psychological Science Agenda*, published by the Science Directorate of the American Psychological Association. In each issue the journal highlights a different career opportunity.

The growing popularity of such career possibilities makes psychology an exciting discipline, something my brief survey below will illustrate. However, before presenting a few current trends, I need to make a disclaimer. Psychology is a very broad discipline. Some psychologists work in schools. Some are clinicians. Some conduct what many would consider biological research. Other psychologists design software or instrumentation panels. The list can go on. Likewise, there is a great deal of diversity in psychological thought. Therefore, the following pages do not claim to be an exhaustive list of current trends but should provide a good overview of the changes that are taking place in a dynamic discipline.

Research Methods: Imaging and Computer Modeling

Several trends in research are having a great impact on how the science of psychology is conducted. I will mention two: the use of imaging and computer modeling.

Technology has enhanced the research process beyond the dissemination of research findings and increased efficiency in data collection. It has made possible high resolution pictures (i.e., MRI) of the brain that allow researchers to map the location of certain cognitive processes.

Computer modeling not only aids our conceptual understanding of cognitive processes (for example, using the computer as an analogy to the brain when developing theories) but can also have practical applications. For instance, psychological research on object recognition has been used in developing the scanning systems for stores to keep track of inventory and cost. Research stemming from neural network modeling has led to increased efficiency of mechanical systems. Such simulation of cognitive processes allows automated human decision-making in the operation of the systems. For instance, M. S. Somers created neural network models of employee turnover at hospitals. He found that the neural network models were better at predicting who would leave the hospital than the traditional regression models, and thus provided data to help in the delicate problems of human resources at a vital institution.

Perhaps my favorite example of this neural network modeling involves satellite maintenance. Specifically, the system is used to adjust the jets which keep satellites in their proper orbits. Failure of a single jet can disrupt a satellite’s orbit—and a disrupted orbit results in interrupted service. When the adjustment occurs simultaneously with the need to compensate for a failed jet, the task requires a series of complicated mathematical calculations. Although people can do this task, computers are faster. Thus the neural network model supplies the “brain power” as a human engineer would, but with a computer performing the calculations, the jet is adjusted in significantly less time.

Internet

The Internet has provided greater access to research. Publishers have begun placing the table of contents of journals online with the full articles available to subscribers. Several publishers also use alerting services that send e-mail updates about new publications. In addition, there are several excellent databases (e.g., PsychInfo, ERIC) online that aid the literature review process. The Internet is also providing a new outlet for scholarly work. For instance, the American Psychological Association has developed an online journal called *Prevention & Treatment*, one of the few online refereed journals. Since this format provides a relatively short submission-to-

print time and potentially greater availability of research findings, more publishers may move to an online journal format in the future—as long as a high standard of scholarship can be maintained.

Finally, the Internet is beginning to become a tool in data collection. Researchers are able to place questionnaires online either on their own or by using specially designed web sites or software. Online experiments are also possible. PsychExperiments is an excellent site for online experiments that can be used as classroom demonstrations or for actual research purposes. Various software packages also make use of the efficiency of the Internet. For example, SuperLab allows researchers to design a study, save the experiment, and e-mail it to another researcher from within the SuperLab window. More generally, the Internet allows researchers greater access to archived data sets for secondary analysis as well.

With such benefits come several challenges, a primary one being America's role in the international community of psychology. Since American psychology has led the world in research for many years, it has generally discarded work done in other countries unless the work was published in English and in American journals. Increasingly, however, over the last decade, other countries are contributing to the dialogue, thanks to positive political changes internally, the increased interest in cross-cultural psychology, and the influence of postmodernism. These changes contribute to the globalization of psychology. One of the key issues in psychology for the next few years is how well American psychology connects with the rest of the world. Therefore, as psychologists in the United States continue the advancement of psychological research, they also must integrate their findings with the work of psychologists around the world.

Applied Psychology

Our society tends to measure everything—from baseball statistics to job satisfaction. Not surprisingly, then, psychological testing is a long-standing area of the discipline. In fact, one of the first applications of psychology was the development of the Army Alpha and Beta tests, which were essentially IQ tests given to place soldiers in positions appropriate for their abilities.

More recently, many academic accrediting agencies and insurance companies have become very outcome oriented. Tests are in demand. Long a controversial tool, intelligence testing has responded to charges of bias by trying to minimize the verbal nature of tests. This overhaul has come about largely for two reasons. First, many have argued that intelligence tests are written using assumptions from one social class and therefore do not apply to people from other social classes and racial or ethnic groups. A second and related concern is that the United States has an increasing minority population. Test developers recognize the potential unfairness to some groups of tests written for speakers of English. Although performance on these tests still tends to be correlated with verbal ability, the trend represents the goal to develop a culturally fair test of intelligence. Testing, in turn, has implications for education, which itself has long been a political issue. Psychologists will be playing a role, then, in matters that go beyond their discipline to matters of public policy.

Public Policy

There has been an increased emphasis over the last several years both to promote psychology and to inform policy makers by providing psychological research on matters important to the general public. Dr. Richard McCarty, the executive director for science at the Science Directorate of the American Psychological Association, refers to this as giving psychology away. For instance, class size in public schools has become a growing concern. In fact, the state of California mandated that class sizes should be limited to only twenty students. Does limiting class size significantly improve student outcomes? One study found that reducing class size in early grades can have a long-lasting positive impact, especially for students from disadvantaged backgrounds (Ehrenberg et al.).

Another area in which psychology is informing public policy relates to gender differences. Periodically, a television news magazine will run a story debating whether boys are really better at math than girls or will decry the underrepresentation of girls in science. Given our culture's

sensitivity to sex discrimination and the impact stereotyping seems to have on test performance, psychological research has become increasingly important in understanding gender differences.

Research can document differences in how men and women perform certain tasks. Women, for example, tend to have more efficient long-term memory, better fine motor skills, more precise speech articulation, and a lower sensory threshold than men. Men, on the other hand, are better at visual transformations, judging moving objects, aiming and throwing, and math and spatial reasoning. However, in a 1996 review of the literature, Halpern noted a considerable difference over all between the distributions of men and women on these tasks. In other words, despite measurable differences among genders when the whole population is considered, there may be none between a given man and woman on any intelligence-related task. Generally speaking, the sexes show no significant difference in overall intelligence. Thus, Halpern concludes that the way in which our society handles public policy issues regarding sex differences depends on the way we interpret psychological research.

As these few examples indicate, psychological research is being used to inform public policy makers on a variety of issues. Among the others worth mentioning are aging, children, youth, families, disabilities, ethnic minorities, HIV/AIDS, lesbian, gay, and bisexual issues, urban initiatives, and women's issues. The Public Policy Office of the American Psychological Association is also involved in violence prevention, aging, and the Healthy Adolescents Project. The American Psychological Society recently started a new journal, *Psychological Science in the Public Interest*, to address such matters from a psychological science perspective.

As psychology continues to grow as a discipline, its applications are also becoming widely apparent. These trends are very favorable for new psychologists because they offer a wide range of opportunities. Industrious students of psychology may find themselves on the cutting edge of psychological development and application. The future of psychology, however, may depend on how well it maintains its scientific roots while meeting the needs of the public and adapting to a changing technological world.

Works Cited

- American Psychological Association. "What Is Psychology?" About the American Psychological Association Web Page. 2001. <http://www.apa.org/about>.
- Ehrenberg, R. G., D. J. Brewer, A. Gamoran, and J. D. Willms. "Class Size and Student Achievement." *Psychological Science in the Public Interest* 2 (2001): 1-30.
- Fowler, R. D. "Myths and Misconceptions." *Monitor on Psychology* 32.5 (2001): 9.
- _____. "Psychology's Dazzling Array of Careers." *Monitor on Psychology* 32.2 (2001): 9.
- Halpern, D. F. "Public Policy Implications of Sex Differences in Cognitive Abilities." *Psychology, Public Policy, and Law* 2 (1996): 561-74.
- Herbert, R. "U.S. Psychology Needs to Reconnect." *APS Observer* 13.10 (2000): 1, 12-14.
- McCarty, R. "Giving Psychology Away." *Psychological Science Agenda* 14.3 (2001): 4-5.
- Somers, M. J. "Application of Two Neural Network Paradigms to the Study of Voluntary Employee Turnover." *Journal of Applied Psychology* 84 (1999): 177-85.

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