



OBSERVER

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Sandra Scarr Is APS President-Elect

Bjork and Sechrest become newest Board members

Continuing the tradition of electing nationally known leaders who epitomize the ideal of service across the breadth of scientific psychology, APS members have given a collective nod to Sandra Scarr as President-Elect and Robert A. Bjork and Lee Sechrest as members of the Society's Board of Directors.

Each of these distinguished individuals is widely recognized for their scientific accomplishments, which span basic and applied research ranging from genetics and social environment to learning and memory to health services research. But in addition, each has also spent an enormous amount of time working to advance the field in other ways, such as serving on peer review committees and on advisory panels for federal agencies and the National Academy of Sciences.



Sandra Scarr

SEE ELECTIONS ON PAGE 4

Astronaut Draws Attention to Psychology, Communication

Astronaut Norman Thagard spent 115 days in space, discusses research issues critical to successful long-duration spaceflight

When physician/astronaut Norman Thagard touched down aboard Space Shuttle Atlantis on July 7, he also landed himself at least two enviable positions in the record books. He was the first American to have ridden on board a Russian launch vehicle—on March 14, 1995, en route to the Russian SpaceLab Mir—but more personally impressive was his 115-day stint in space, most of it aboard the Russian space station. Thagard's marathon feat also has renewed NASA's focus on psychological issues of long-duration spaceflight.

While Russian cosmonauts have endured much longer missions, Thagard broke the American 84-day record established during the Skylab missions in 1973 and 1974. The mission also entailed the first docking of a US space shuttle with the Mir space station.

And, whether it was intentional or not, when Thagard, 52, landed at Kennedy Space Center, he had stirred up a



Norman Thagard, pictured in a cosmonaut space suit, trained in Russia more than a year before the historic flight.

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Psychology Does Have Friends in Washington

Richard F. Thompson
President
American Psychological Society



Recent actions by the House Science Committee relating to the value of research in the behavioral and social sciences in the context of National Science Foundation funding (see Anne C. Peterson's guest presidential column, July/August 1995 *Observer*) illustrate yet again how vulnerable we are to political pressure.

For a variety of reasons, the behavioral and social sciences are viewed by some as different from other areas of science.

Our pronouncements and recommendations concerning public policy sometimes seem to conflict with the moral/ethical views of some of our critics. Indeed, it is critical to separate completely public policy recommendations and values.

An example that has been widely debated is the legislation of some illegal drugs of abuse. It would seem that at least two conflicting values are at work here: efforts to reduce crimes associated with illegal drugs versus efforts to reduce the number addicts.

Hopefully, we can make reasonably accurate predictions about the outcomes of legislation on, for example, marijuana; at least legislators have a right to expect this of us. But should we go beyond this to recommend that policies entail particular value judgments? My own view is that we should not, but the issues can be very complex.

A most hopeful sign in the current debate over the value of the behavioral and social sciences is the very strong support from the National Academy of Sciences (NAS).

In a statement released on June 28 (see page 45), Bruce Alberts, President of the NAS, "strongly affirms that the social and behavioral sciences are important disciplines in which independent scholarship and basic research have made significant contributions to mankind's store of knowledge and to the ability to meet critical societal challenges."

He goes on to list a number of key national problems being addressed by current advances in the social and behavioral sciences in such areas as education, health, crime and overpopulation. Many of these problem areas are central to psychology;

SEE THOMPSON ON PAGE 44

Watch Your Mailbox!

Membership renewal information for 1996 will arrive in your mail shortly. To continue your uninterrupted receipt of APS publications and services, please be sure to renew your membership by **December 15, 1995**. **Your renewal by that date also guarantees you a listing in the 1996 APS Membership Directory**, a veritable *Who's Who* in scientific psychology. (The information shown on your renewal notice will form the basis of your directory entry, so please spend a few moments making sure it is accurate and complete.) APS's membership is almost 16,000 strong and still growing. Thank you for the part you continue to play in our success!

ELECTIONS FROM PAGE 1

A Founding Mother

Sandra Scarr's election to the presidency of APS caps her history of involvement with the Society from day one. Instrumental in the founding of APS, she has served the organization in a variety of roles, from publications chair to journal editor to Board member. She also received APS's James McKeen Cattell Award for distinguished contributions to applied research.

One of Scarr's past collaborators, Richard A. Weinberg, who is director of the Institute on Child Development at the University of Minnesota as well as a member of the APS Board, believes that "Sandra deserves to be President. She has a passion and commitment to the organization—after all, she is a founding mother of APS—that will serve us well as we pursue the Society's vision and mission."

Scarr's perspective is more succinct: "APS is my favorite organization." Scarr said the Society was established only after many people spent years trying to make the American Psychological Association more responsive to the academic research community. "The people who founded APS—we were all members of the APA council—did so only after extreme trials," said Scarr, who resigned from the association in 1990.

"But we did it because we felt the best interests of the academic community would be served," she added. "Obviously, we were right," she said, given the instant growth of APS.

Scarr has maintained an active profile in APS. In addition to being a founding member in 1988 and a Charter Fellow, she has been on the Board of Directors since 1991 and was also chair of the publications committee from 1989 to 1991, during which time she oversaw the development of APS's flagship journal, *Psychological Science*. Since 1990, she has been co-editor (with Charles "Randy" Gallistel) of APS's second journal, *Current Directions in Psychological Science*. (Their term as co-editors will end in December 1995 when Emanuel Donchin takes the helm—see the May/June 1995 *Observer*.)

Scarr has been elected to leadership positions in several other scientific organizations, including the presidencies of the Society for Research in Child Development and the Behavior Genetics Association.

The Human Side

In a lengthy article about research and twins, the August 7 issue of the *New Yorker* said this about Sandra Scarr: "Brilliant and dauntingly prolific, much praised and often damned, Scarr has divided the academy because she has insisted on applying the insights of behavioral genetics to developmental psychology."

Using multidisciplinary perspectives is a career-long habit for Scarr. She studied sociology and anthropology as an undergraduate at Vassar, fields she chose "because psychology there was influenced by Yale's program, which was either animal research or human psychophysiology" and not in keeping with her interest in "the more human side of psychology."

After working as a research assistant at the National Institute of Mental Health, Scarr earned her PhD in psychology and social relations from Harvard, which she described as "a perfect match for me" because its social relations department had the areas of psychology she was interested in—developmental, social, clinical, and personality—as well as sociology and anthropology.

In a way, her understanding of environmental and social influences on human development led to her interest in genetics. "It always seemed to me that people were individually different, that society and family can't explain every individual difference," says Scarr. "Behavioral genetics helps get rid of some of the mysticism

about how people respond to their environment."

But Scarr also believes that the "nature versus nurture" debate sets up a false dichotomy. Instead, she combines the two, using her background in sociology and anthropology, which she says makes her especially attuned to incorporating environmental factors in her research designs.

Putting the Active in 'Activist'

During her presidency—which will begin in June, 1996, when she will succeed current President Richard Thompson—Scarr predicts that "I will be seen as an activist." Acknowledging that the Society's emphasis has necessarily been on growth in membership, she feels that "we do not have an infinite audience to address" and she will be exploring ways to better serve the discipline, such as addressing the interests of teachers of psychology, or trying to inject research findings into public policy concerns. Particularly relevant is her research on child care.

"Some of the research on child care is relevant to the current debate going on in Washington," said Scarr. For example, as in many things, "there is a tradeoff between cost and quality. But we know that lower income children need higher quality care to compensate for their deprivations."

Most recently, Scarr has been Commonwealth Professor of Psychology at the University of Virginia. From 1977 to 1983, she was professor of psychology at Yale University, and from 1973 to 1977, professor of child psychology at the University of Minnesota. In 1993-94, Scarr was the Kerstin Hesselgren Visiting Professor in Sweden, where she lectured at Gothenburg, Stockholm, Uppsala, Lund, and Umea Universities.

Her research on behavior genetics, intelligence, and child development has been published in more than 200 articles and four books, and she has received numerous awards and honors for her contributions to science. In recent years, Scarr has been studying parental discipline, an issue that traditionally involves social and environmental theories. She is using behavioral genetics to look at individual differences in how parents structure their discipline, based on the notion that "people are not randomly assorted into their environments, and they respond to their environments in ways that are different."

A Shift in Milieu

Sandra Scarr's energy and ability to bridge diverse areas are legendary. She will need both in her latest career move. In June, she took leave from the University of Virginia to become CEO and Chairman of the Board of Kinder Care Learning Centers, Inc., after serving on the organization's board since 1990.

Despite the shift in milieu from academe to the corporate world—Kinder Care is a \$600-million a year business with 22,000 employees serving 150,000 children in 1,160 day care centers in 38 states—Scarr sees many situations in which she will be drawing on her scientific background.

"My research is directly applicable to the company's efforts to improve child care and support working families," says Scarr.

Scarr also finds her training useful in understanding the administrative and economic aspects of running a large corporation. "In business, a statistical mind is extraordinarily useful," she says. "Organizations, whether higher education or business, share a lot in common. In almost any organization, relationships are a central consideration—how you treat people, how you set up information systems and communications."

"What's different [in a business setting] is a low delay of

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gratification," she continued. "You can get things to happen today. In business, you want a kind of control that avoids bad decisions; you want to employ people who have good judgment and give them discretion. In a state university, people are drowning in bureaucracy and red tape because of the fear of losing control. There's not a lot of flexibility in that kind of system," says Scarr.

Bjork: People Are Not Tape Recorders

Robert Bjork, Professor of Psychology at the University of California-Los Angeles, has been elected as a member of the APS Board of Directors for a three-year term that began in June. A Charter Fellow of APS, he received his PhD in psychology from Stanford University. He is a cognitive psychologist whose research focuses on the processes that underlie human learning and memory, and on the implications of that research for training and instruction. He is currently the editor of *Psychological Review*.

Although Bjork has spent his career in basic research, studying encoding and retrieval processes involved in learning and memory, he has long been interested in the potential applications of such research.

Evidence of his applied interests is a nine-year involvement in the National Research Council's Committee on Techniques for the Enhancement of Human Performance. Together with John Swets, the committee's first chair, Bjork co-authored a March 1990 *Psychological Science* article, "Enhancing Human Performance: A Study of the National Research Council for the Army Research Institute," which describes the creation, mission, and early conclusions of the committee. Established in 1985, the committee is now in its fourth phase. Bjork chaired the committee's second and third phases, which produced a report in 1991 (*In the Mind's Eye: Enhancing Human Performance*) and another in 1994 (*Learning, Remembering, Believing: Enhancing Human Performance*), both available from the National Academy Press. (See the November 1991 and September 1994 *Observer*.)

Bjork was an undergraduate math major at the University of Minnesota and a graduate student in mathematical psychology at Stanford. And his initial work—developing mathematical computer models to simulate learning and memory processes—aroused his curiosity "about the very unique characteristics of humans as learners and rememberers."

"The reason we're not individually as efficient as we might be is that we misunderstand some fundamental properties of our own memories," says Bjork. "We're completely unlike man-made devices such as tape recorders. So the question is—for us—what causes learning to take place, what enhances memory?"

Bjork's research interests also stem from a life-long involvement in playing and coaching sports. "From a sports standpoint," he notes, "the issues are how and when to practice, how to perform at one's best under pressure, and so forth." In addressing such questions, he has collaborated with Richard A. Schmidt, an expert on motor skills. Their article, "New Conceptualizations of Practice: Common Principles in Three Paradigms Suggest New Concepts for Training," appeared in the July 1992 *Psychological Science*.

Asked to comment on the state of psychological research



Robert Bjork was elected to the APS Board.

Psychology in perspective...**Women Earn Majority of Psychology Degrees**

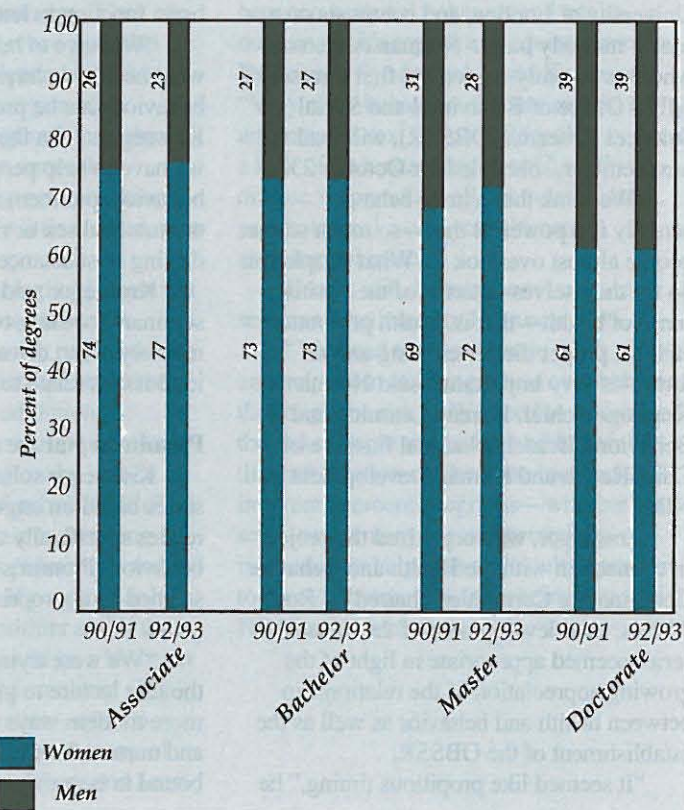
According to the latest report of the U.S. Department of Education, women continue to earn a majority of psychology degrees (of the 82,573 total) at each educational level for for 1992-1993. In fact the gap between females (59,939 total degrees) and males (22,634 total degrees) widened for associate and master's in psychology while bachelor and doctorate ratios have remained consistent.

According to the data compiled from U.S. institutions, women earn about 77% of the associate degrees in psychology, 73% of the bachelor's degrees, 72% of the master's degrees, and 61% of the doctorates. Men, on the other hand, earn 23%, 27%, 28%, and 39%, respectively.

This continues the trend (see July/August 1993 *Observer*) revealed in 1990-1991 data. At that time women earned 74% of the associate degrees and 69% of the master's degrees.

Overall, of all degrees conferred, psychology represents .2% of the associate degrees; 6% of the bachelor degrees, 3% of the master's degrees, and 9% of the doctorates. The report indicates that in most fields, women dominate the degree programs at the associate, bachelor, and masters level, while men statistically earn the majority of doctorates.

These statistics do not reflect the fact that most psychology PhDs go on to pursue non-research positions (e.g., clinical practice).



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NIH Seminars Focus on Link Between Health and Behavior

In a recent statement, Bruce Alberts, President of the National Academy of Sciences noted that half of all deaths in the United States are caused by harmful behaviors. In the same statement, he recognized the importance of behavioral sciences in efforts to improve the nation's health.

In this spirit, the National Institutes of Health (NIH) has initiated a lecture series addressing the relationship between human behavior and health maintenance.



Norm Krasnegor organized the lecture series with the Health and Behavior Coordinating Committee at NIH.

With a speaker line-up of mostly APS members, the Health and Behavior 1995 Seminar Series began last June with a discussion on nature and nurture by Robert Plomin, of the University of London, and continues on a nearly monthly basis. Norman Anderson, who was recently named the first director of NIH's Office of Behavioral and Social Sciences Research (OBSSR), will lead the next seminar, scheduled for October 23.

"We think that human behavior actually is a powerful link—so much so that people almost overlook it. What people can do for themselves in terms of the positive sense of health—that is, health promotion, eating a proper diet, exercising and so forth—is very important," said Norman A. Krasnegor, chief, Human Learning and Behavioral Branch, National Institute of Child Health and Human Development at NIH.

Krasnegor, who organized the project in connection with the Health and Behavior Coordinating Committee chaired by Ron Abeles, said development of the lecture series seemed appropriate in light of the growing appreciation of the relationship between health and behavior as well as the establishment of the OBSSR.

"It seemed like propitious timing," he

said. "We have felt for some time that the behavioral agenda that related to health has not been well represented at NIH in terms of speakers, and we felt a need to educate our colleagues in the larger community, not only about the value of such research, but about what has been accomplished to date."

While specifically targeted to the NIH community, Krasnegor said anyone is welcome to attend the seminars. "We are hoping that as the series continues, more of the general public will attend."

Krasnegor said he plans to make the series a permanent fixture at NIH with speakers appearing on a monthly basis, excluding August and December.

"We are going to try to have about 10 lectures per year," said Krasnegor, who added that in addition to Anderson's October seminar, two more seminars have been scheduled at this point. Jack Henningfield will discuss the biological and behavioral basis of tobacco addiction on November 30 and Thomas Coates will discuss behavioral aspects of AIDS in February 1995. Bennett and Sally Shaywitz led the second seminar in July, focusing on brain function in learning.

"We have to help people to understand what healthy behaviors are so those behaviors can be promoted," said Krasnegor. "On the other side of the coin, we have to help people understand what behaviors put them at risk, for example, unprotected sex or risky behaviors related to driving or substance abuse."

Krasnegor said he is planning future seminars focusing on topics including memory, heart disease, aging, and behavioral issues relate to dental health.

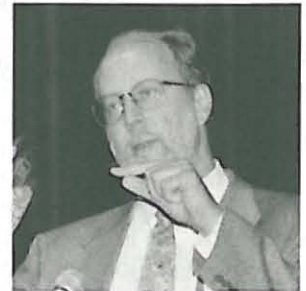
Plomin on Nature and Nurture

Krasnegor solicited speakers for the series based on ongoing research and how it relates specifically to health and human behavior. Plomin's inaugural seminar seemed an appropriate beginning to the series.

"We were trying to set the stage with the first lecture to give people an idea about more modern ways to think about nature and nurture," said Krasnegor. "Is someone bound to be a risk-taker because that is the

way they are, or is it a contextual thing....

Plomin's lecture of nature and nurture relates directly to the revolution in molecular biology, which has been seen as a new Rosetta Stone for understanding diseases in a more basic way—



Robert Plomin kicked off the series with a discussion on nature and nurture.

particularly diseases that are inherited. What we tried to do with this lecture is to demonstrate how behavior relates to both genetics and environment. It is not either/or. It is both. This gives us a clue to various kinds of behaviors that might be related to some addictive diseases, for example, cigarette smoking, drug addiction, alcoholism—all of which are behaviorally mediated processes which can be deleterious to health. The question is how much is genetics how much is behavior?"

Organization of the Brain for Reading and Language

Neurologist Bennett Shaywitz and his wife, Sally Shaywitz, a pediatrician, are co-directors of the Yale University Center for the Study of Learning and Attention.



Together they led the second seminar in the series, titled "Organization of the Brain for Reading and Language," July 27.

The Shaywitzes' lecture was based on a recent brain imaging study they conducted

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to examine why some people have trouble learning to read. The Shaywitz study used functional magnetic resonance imaging (fMRI) to trace which parts of the brain were active in a series of letter-to-sound conversion tasks. What they surprisingly found was that there was a difference in brain use between men and women in a task that tested the ability to match symbol to sound, a common deficiency in people with reading disabilities, according to a June 1995 article in *Discover*.

"This was a very important lecture because it gives us an insight into the brain signatures of people who have dyslexia, for example," said Krasnegor. "We know that about 20 percent of children are affected by learning disabilities, and that is just an enormous amount. So what we are trying to do is understand how aspects of brain physiology can relate functionally to behavior or lack thereof."

Anderson and the Mission of OBSSR

As the first director of the OBSSR, an office created by Congress in 1993, Norman Anderson has said that one of his priorities is to develop initiatives that promote a basic and clinical multidisciplinary approach across NIH (see July/August 1995 *Observer*). "That is, having social, behavioral and biomedical scientists working together on critical scientific questions," Anderson recently told APS's Science Policy staff Sarah Brookhart. "This approach, I believe would be most fruitful for improving our prediction and treatment of disease."

Krasnegor agreed and invited Anderson to speak October 23.

"[Anderson] has been brought on to head the office

and he will try to elucidate his own vision for the office and the kinds of things he would like to achieve which relate not just to health and behavior, but to other behavioral and social sciences at NIH, and, ultimately, to public health," said Krasnegor.

In an abstract discussing his seminar, Anderson said he wanted to relay an



Norman Anderson will discuss what he envisions for OBSSR.

understanding of the association of socioeconomic status (SES) and health.

"The association of SES with morbidity and mortality is a ubiquitous finding in the health literature, and is relevant to the illnesses addressed by each of the NIH ICDs," he wrote. "A critical issue facing health researchers is to identify the mechanisms that link SES with health outcomes; a challenge which necessitates multidisciplinary efforts."

Tobacco Addiction

Jack E. Henningfield, chief of the Clinical Pharmacological Branch of the National Institute on Drug Abuse, Addiction Research Center at the National Institute on Drug Abuse in Baltimore, Maryland, will address the behavioral and biological bases of tobacco addiction November 30. Henningfield has received recognition for his research in the area of drug abuse—especially nicotine addiction—and its prevention and control. His research program includes basic research on biologic underpinnings of nicotine addiction, as well as new pharmacologic treatment strategies. He was editor of the 1988 Report of the Surgeon General on the *Health Consequences of Smoking: Nicotine Addiction*, for which he received an Outstanding Service Award from the World Health Organization.

"Nicotine, the principle component of tobacco, can be addictive in the same sense that other drugs of addiction are. They can produce dependence and when you stop taking them, you get symptoms and then relapse to use," said Krasnegor, who himself edited a monograph on the subject about 17 years ago. "The curve that represents relapse into cigarette smoking is about as steep, and even a little steeper, than that for heroin."

Krasnegor said Henningfield's seminar will explore how scientists know that tobacco is addictive and what can be done to stem the behavioral contributors to the development of tobacco addiction.

"We will learn about the implications that smoking has for people who smoke as well as the larger issue of public health," he said. "We know that cigarette smoking is implicated in a variety of pulmonary and cardiovascular diseases. If people didn't smoke, they would be healthier and if they did start and stop, they would be a lot better off than if they maintained smoking. The addictive quality of cigarettes—of nicotine—is a likely factor in a great many of leading health problems—cancer and heart

disease. This, we think, is a very preventable behavioral aspect of health care. If people didn't start, they would likely lead a more healthy life."

Behavior and the AIDS Virus

The experience and interests of Thomas Coates, director and principal investigator of the Center for AIDS Prevention Studies at the University of California-San Francisco, have focused throughout his career on the study of disease-related behavior with an emphasis on interventions to modify behaviors. He has written extensively on the psychosocial variables and AIDS-related immune dysfunction, the efficacy of strategies to modify high-risk behavior, and the effects of antibody testing on high-risk behavior. His current research involves studies to reduce high-risk behaviors in several populations, including African-American, young gay males, Asians, teens and heterosexual adults.



Thomas Coates will discuss the relationship between behavior and AIDS.

"There is a very important connection

between personal behavior and health outcome [with regard to Acquired Immune Deficiency Syndrome]," said Krasnegor. "Very risky behaviors that are related to unprotected sex, the use of needles, or even a lack of understanding about how this disease is spread are all behavioral issues, psychological issues and ultimately sociological issues."

Coates will discuss these issues at a seminar scheduled for February 1996.

"We need to learn how to teach people and help them to change their own behavior that might be risky. We need to understand the risks people are taking and hopefully that information can become incorporated into management programs—whether it is self-management or management by institution to help kids and adults learn how to protect themselves from being exposed to HIV," said Krasnegor. **E.R.**

NASA FROM PAGE 1

flurry of high-level NASA attention in response to remarks attributed to him by the media (e.g., Associated Press, CNN, National Public Radio, NBC's *Today Show*) concerning psychological stresses of long-duration spaceflight while he was aboard Mir.

NASA may now need to get down to earth and deal with some potentially weighty research and procedural issues, as NASA director Daniel Goldin publicly apologized to Thagard for NASA's relative inattention to psychological issues facing astronauts. Reacting specifically to the media reports, Goldin said after the Shuttle landing, "We put all of our focus on the physical well-being of the astronauts and the success of the mission. We neglected the psychological well-being, and Dr. Thagard made it clear to us."

Clarification

Speaking recently with *Observer* Editor Lee Herring, Thagard attempted to clarify his comments but continued to emphasize the importance of attending to the psychological needs of astronauts, given NASA's increasing involvement in long-duration flight and dependence on internationally cooperative space missions. "Very confused by the post-flight reaction" to his comments, Thagard said he was "just telling it like it was" so that NASA, and people in general, would be aware of the realities of long-duration flight. Thagard said that he had not attached much importance to the comments he had made in space "other than trying to characterize the environment and giving people an appreciation of what it was like on Mir Station." (Vacationing as we went to press, Goldin was unavailable to comment on his post-landing statement.)

With a laugh, four-time Shuttle veteran Thagard agreed that Mir did not present the level of challenge faced by Apollo 13 astronauts and pointed out that his "task for the flight was pretty well known and defined before I flew, so there wasn't a lot of real-time decision making that had to be made in terms of what my role would be. It was already pretty much laid out before I ever went into orbit. A space station is a pretty benign environment in fact. Nothing happens very fast there. Even the situations that might be a hazard are not usually ones that are an immediate hazard. You've usually got some time to think and react," unlike active stages of flight such as ascent and

re-entry.

Language Barrier/Fluency

While rating himself a "5-6" in Russian linguistic skills (on a 10-point scale, where "10" = native fluency), and believing himself to be "quite familiar with Russian culture and quite comfortable with it," Thagard did acknowledge a sense of cultural isolation on the mission. "From a cultural standpoint, it's an isolated environment."

This was not an unexpected situation, according to Thagard, and he felt he had been prepared for it. The isolation was due mostly to two factors: Ground-to-air communications were all in Russian, and the procedure for receiving newscasts from earth was not an official part of the mission's communications. A method for obtaining news about US and world events was not built in to the daily routine, and special effort was required to make radio contact with news sources. "This should be a more formalized part of the official procedures," Thagard said. On the new Alpha international space station, to be in orbit late in 1997, there should be a "formalized provision for [such] communication in whatever language is needed," even though English will be the official language there. (A consortium including Canada, Japan, European nations, and the United States will use experience gained on Mir to develop the Alpha space station.)

Communication Versus Science

Bryan O'Connor, Associate Deputy Director of the Space Shuttle program, told the *Observer* that the Russians have understood the importance of morale-boosting communications with family for a while, and "Thagard may have been reacting to the difference in priority the two countries placed on such communication." But the cash-strapped Russians have limited air-to-ground communications capability and much of the air time was spent on housekeeping tasks to maintain the aging SpaceLab. "We probably made a mistake in not being more forceful with the Russians about getting air time [for Thagard]," said O'Connor.

O'Connor said too that as the sole American aboard a Russian vessel, Thagard was in part being treated like a guest by the Russians and being underutilized. "Though courteous, they wouldn't let him do things he was perfectly capable of doing, simply because they were in charge, and they




Astronauts and a cosmonaut collect data from Mir-18 crew members who have been aboard the space station for four months. Thagard is at left.

were responsible." And, due to his non-commander role and his extensive scientific experiment assignments on the Mir, there was a natural tendency for Thagard to operate more independently on the mission, said O'Connor. In fact, he was tending to many of the 28 experiments on the Mir and Shuttle missions. Included among them were studies of neurosensory function, behavioral and performance research, and physiological investigation of gravity and microgravity.

But Thagard confessed to having been frustrated in his research and "not having enough to do" for a period in May when experiments were canceled or postponed due to his weight loss (falling to 140 from 158), delayed delivery of research instruments by a late arrival of the unmanned Russian Spektr module, and a freezer malfunction. O'Connor said NASA had known pre-launch about the delays of Spektr and took a calculated risk that Thagard might become bored for a short period. And Thagard's weight loss at that time was due in part, he says, to his having rigidly followed a "bar-coded" diet.

The diet was required by the physiological experiments, and Thagard was a bit annoyed that the cosmonauts did not follow the prescribed diet, invalidating some experiments and making others undoable. "They had taken one look at the diet and decided they'd lose weight and chose to eat non-bar-coded food," said Thagard. And the Russians refused to follow through with the physiological water-loading protocol prior to entry into earth gravity on Atlantis. The Russians place a much lower priority on the science, but "Thagard was strict about following the scientific regimen, which in itself is physically stressful," said

SEE NASA ON PAGE 29



National Defense Science and Engineering Graduate Fellowships

STARTING IN ACADEMIC YEAR 1996 - 1997

As a means of increasing the number of U.S. citizens trained in disciplines of science and engineering of military importance, the Department of Defense plans to award approximately 90 new three-year graduate fellowships in April 1996. National Defense Science and Engineering Graduate Fellowships will be awarded for study and research leading to doctoral degrees in, or closely related to, the following disciplines:

AERONAUTICAL AND ASTRONAUTICAL ENGINEERING
BIOSCIENCES (*Includes Toxicology*)
CHEMICAL ENGINEERING
CHEMISTRY
COGNITIVE, NEURAL, AND BEHAVIORAL SCIENCE
COMPUTER SCIENCE
ELECTRICAL ENGINEERING
GEOSCIENCES (*Includes terrain, water, and air*)
MANUFACTURING SCIENCES AND ENGINEERING
(*Includes Industrial Engineering*)
MATERIALS SCIENCE AND ENGINEERING
MATHEMATICS
MECHANICAL ENGINEERING
NAVAL ARCHITECTURE AND OCEAN ENGINEERING
OCEANOGRAPHY
PHYSICS (*Includes Optics*)

National Defense Science and Engineering Graduate Fellows selected in 1996 will receive a stipend in addition to full tuition and required fees. The amount of the stipend is \$16,500 for 1996-1997; \$17,500 for 1997-1998; \$18,500 for 1998-1999.

Recipients of 1996-1997 National Defense Science and Engineering Graduate Fellowships do not incur any military or other service obligation.

Specific information regarding the fellowship and an application package are available from Battelle Memorial Institute, a not-for-profit research institution, which is administering the program for the Department of Defense.

Additional information and an application are available from:

NDSEG Fellowship Program
200 Park Drive, Suite 211
P.O. Box 13444
Research Triangle Park, NC 27709-3444
ATTN: Dr. George Outterson
Phone: (919) 549-8505
Fax: (919) 549-8205
NDSEG@ARO-EMH1.ARMY.MIL
<http://www.battelle.org/ndseg/ndseg.html>

Completed applications must be received by
Battelle by **January 17, 1996.**



On the Validity of Psychology Experiments

Keynote speaker Kihlstrom discusses the investigator-subject relationship and implications for improving experiment validity

When she introduced John F. Kihlstrom of Yale University as keynote speaker at the opening session of the seventh annual APS convention in New York, Marilyn Brewer admitted a problem:

"Trying to find some thumbnail way to characterize or capture the kind of expertise that John Kihlstrom represents," Brewer said, "I found myself working on one of those tremendously hyphenated things—'John represents neuro-cognitive-social-clinical-personality'—and it was getting longer and longer, when suddenly I stopped myself and said: There is one word that captures the specialization and area of expertise that John represents and that is 'psychology.' He is truly a psychological scientist in the full sense of the broad range to which that applies."

Following are excerpts from Kihlstrom's address, "From a Subject's Point of View: The Experiment as Conversation and Collaboration between Investigator and Subject."

For a speaker and listener to communicate, they have to establish common ground. Each must have some sense of what the other person knows, believes, and supposes to be true, and each must use this knowledge in structuring his or her communication, [as] we know from the work of Stanford University psychologist Herbert Clark. If speaker and listener are not on common ground, they will not understand each other and their interactions cannot go very far.

In order to achieve this mutual understanding, people have to manage their conversations according to what Paul Grice, a linguist at the University of California-Berkeley, has called the cooperative principle: Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.

Of course, you don't need to be a Gricean sociolinguist to think about experiments that way. Harvard University psychologist Martin Orne had the same kind of idea about demand characteristics and the ecological validity of psychological experiments.

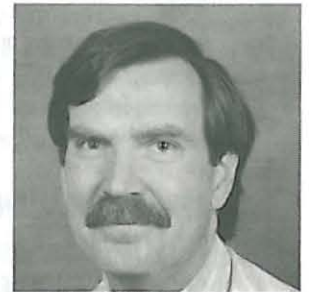
Over the years, both notions have been somewhat controversial. The demand characteristics argument got a reputation as a spoiler of experiments. But that's because most people who made the argument failed to appreciate what it was all about. You don't use demand characteristics to discount experiment outcomes—you evaluate them to make your experiments better, more ecologically valid, and more convincing. So I thought I would remind people what the argument was all about, and reflect on its connection to Gricean sociolinguistics, and on the meaning of both for what we do as psychological scientists.

From Orne's point of view, the purpose of laboratory research is to understand the real world, to make the problem simple so that it can be studied effectively, and to control relevant variables so that important relations, especially causal relations, can be revealed. Unfortunately, generalization from the lab to the real world requires an inferential leap: its legitimacy depends on the degree of similarity between the

conditions which are obtained in the laboratory and those found in the real world.

The situation is bad enough in animal research, but it is even worse in human research, for the simple reason that human subjects are not reagents in test tubes—passive responders to the experimenter's manipulations.

They are sentient, curious creatures, constantly thinking about what is happening to them, evaluating the proceedings, figuring out what they are supposed to do, and planning their responses. These normal human cognitive activities may interact with experimental procedures in unknown ways. At best, they can obscure the effects of a manipulation by adding noise to the system. At worst, they can render an entire experiment invalid.



John Kihlstrom

For Orne, the experiment is a unique form of social encounter, with roles and rules that are not found anywhere else (except perhaps in doctors' offices). This uniqueness may preclude generalizations from lab to life, which is what Orne means by threats to ecological validity.

In the first place, human subjects are volunteers who, in addition to their desire for remuneration (whether in cash or research participation points) have an emotional investment in research which stems from three goals: to further scientific knowledge, to find out something about themselves, and to present themselves in a positive light.

Second, the experimenter and the subject enter into an implicit contractual arrangement with specifically defined roles. The subject agrees to tolerate deception, discomfort and boredom for the good of science, and the experimenter guarantees the safety and well-being of the subject.

Third, the experiment is by its very nature episodic. Its important respects it is divorced from the rest of the subject's

CONTINUED ON NEXT PAGE

FROM PREVIOUS PAGE

life experiences and, in any event, it is time-limited and should have no permanent consequences for the subject.

Fourth, the subjects perceive the experiment in the context of their entire experience. In trying to discern what the experiment is all about and deciding what to do, they pick up on what Orne called the "demand characteristics" of the experiment. By this he meant the totality of cues available in the experimental situation which communicate the experimenter's design, hypotheses, and predictions. Some of these cues are explicitly present in the experimenter's instructions to the subject, but many of them are implicit in the solicitation materials, campus scuttlebutt, incidental remarks made by the research assistants, and hints communicated by the procedures. The important thing to understand is that demand characteristics aren't just communicated by the experimenter. Some demand characteristics are brought into the experiment by the subject, while others arise as the experiment proceeds. In either case, they're everywhere. In the final analysis, they are internal to the subject, they can't be predicted in advance by someone external to the experiments, and, in principle, they cannot be controlled. They can only be evaluated.

The subject's behavior is determined by his or her perceptions of the experimental situation, and those perceptions may be at variance with the experimenter's intentions. If this occurs, the experimenter and the subject are literally participating in two different experiments, and ecological validity is lost.

So in order to make sense of experimental outcomes, the experimenter must attempt to understand the subject's behavior from the subject's point of view. Unfortunately, this understanding is impeded by what Orne called the pact of ignorance implied by the experimental contract. Both parties want the experiment to work. Therefore, the subject agrees not to tell the experimenter that he or she has figured out the experiment, while the experimenter agrees not to force the subject to admit that he or she possesses this forbidden information.

In order to break the pact of ignorance, Orne argued, the experimenter and subject must alter their usual roles, concluding the experimental episode and transforming what once was a subject into a genuine co-investigator, who feels it is legitimate to reflect truthfully and dispassionately on what has gone on before. That's what Orne's real-simulator design was all about. Simulators aren't subjects in the usual sense, because they are only pretending to be in an experiment. They're not controlling for demand characteristics, or indeed for any other experimental variable. They are collaborators of the experimenter, helping to evaluate the experimental design.

All experiments have demand characteristics, and subjects can be guaranteed to pick up on them—threatening the ecological validity of our experiments—and we ignore this possibility, at our peril, as scientists.

Orne was concerned with ecological validity, and with the peculiar character of the experimental situation. To a great extent, he thought that demand characteristics were a problem because of motives that were peculiar to research participants—to help the experimenter, to learn about themselves, and to look good.

Grice reminds us, though, there is another motive which subjects display both in the lab and elsewhere in life. Subjects aren't just motivated to guess and confirm the experimenter's hypothesis. As listeners, that is, as people, they are primarily motivated to make sense of any communicative situation in which they find themselves. In that respect, at least, Orne needn't have worried. For what happens in the laboratory is entirely representative of what goes on in the real world. Because the laboratory is just like the real world after all, it follows that as we establish common ground and collaborate with our subjects we must be careful to follow Grice's maxims: Be cooperative. Be informative. Be true. Be relevant. And be clear.

The full text of Kihlstrom's speech is available on audiotape. See ordering information, page 28.

Beginning in 1997...

APS's Annual Convention Comes to Washington for Two-Year Term

Because of Washington's popularity with its members as a meeting site, APS will hold both its 1997 and 1998 Annual Conventions here in the nation's capital. We also will be moving the meeting to the Memorial Day weekend to take advantage of Washington's beautiful springtime weather. The dates of these future conventions are:

9TH Annual Convention
May 23-May 26, 1997

10TH Annual Convention
May 21-May 24, 1998

But there are more advantages to holding the meeting in Washington than just offering attendees an exciting location. In fact, ***it will actually save you money!*** The APS convention room rate at the Washington Hilton will be only \$100 plus tax per night for a single or double room in 1997 and only \$105 for a single or double room in 1998!

Also, because Washington is the Society's home base, administrative costs can be kept lower, enabling us to keep registration fees modest for our members.

So mark your calendars and plan to spend springtime in Washington in '97 and '98!

UNABOMBER FROM PAGE 3

ment. "I think discussion about these issues is a far more positive and ultimately much more effective... than violence."

It is somewhat ironic that the Unabomber chose Tyler as a pen pal. Before joining the University of California, Tyler was a professor at Northwestern University in Illinois, the location of the first two Unabomber bombs in the late 1970s, according to *The Oakland Tribune*. University of California-Berkeley has twice been the target of Unabomber attacks and the FBI believes that the terrorist currently lives in Northern California.

According to FBI spokesman George Grotz, it was Tyler's decision to reply.

"This was his decision and he has since responded," said Grotz, who added that theories that the FBI actually wrote Tyler's response were false. "There was all kinds of speculation initially that the FBI had actually written the letter and told [Tyler] what to say but all of that is untrue. He did the letter himself and turned it over to the *Chronicle* [for publication]."

On July 4, Tyler's 23-paragraph response was printed in the *Chronicle*.

"I have read the manuscript and am writing this open letter to address the concerns raised by FC, both in his letter to me and in the manuscript itself. I regret that we cannot communicate more directly.... In your letter, you suggest that we look beyond the question of whether you have social or psychological problems and consider the substance of the issues you raise in your manuscript. This seems to me a fair request," wrote Tyler. "I agree that it is important for all Americans to talk about what is wrong with our society and to try and find ways to improve it. By circulating your manuscript you are encouraging us to think about these important issues.

"I have tried to read and consider your arguments with an open mind. I think violent actions are wrong and I am pleased that you have decided to communicate your ideas by sending me (and others) your manuscript," Tyler continued.

Tyler said the central theme of the Unabomber's manifesto seemed to be that economic and technological changes in society have had a negative effect on people's lives; opportunities for autonomy are decreasing while feelings of powerlessness are increasing.

Tyler additionally said that the Unabomber argued that an industrial-technological society cannot be reformed.

"I agree with you that technology is resulting in many social problems and that our society has to address those problems and their solution," wrote Tyler, who then added that he did not agree that society cannot be reformed. "There have been increasing signs that people are making choices that create individual freedom and local autonomy for themselves....

People are finding ways to change their lives in positive ways."

Tyler also addressed and condemned the Unabomber's use of violence.

"...[H]ow is it useful to promote social stress and instability, especially through acts of violence? My impression is that people react to violence by becoming less willing to change," wrote Tyler. "How can you encourage people to think about your alternative ideology by creating fear and insecurity?"

Tyler said that he believed that education, not violence, was the key to changing people and society and suggested the Unabomber, or FC, develop a core group of rational, intelligent people to "articulate and develop a new ideology that allows us to move beyond the problems of technological-industrial society.... Do you have thoughts about how such a group could be formed? Who should be on it? What the most important issues for it to address might be?" asked Tyler.

Tyler closed his correspondence by commending the Unabomber for suggesting in his manuscript that a revolution does not have to be violent.

"It can occur peacefully and over a period of decades," he wrote. "In that spirit, I think society should consider the important issues you raise in your manuscript."

"Seeking a win-win solution"

Negotiation theorist and APS Charter Fellow Dean Pruitt said Tyler's response was a legitimate attempt to consider and evaluate the ideas of the manifesto.

"I would say that Tyler was using a reasonable approach to a fellow human being, which negotiation theorists, among others, would endorse. Clearly one of his major aims was to encourage FC to continue writing about his views rather than sending more bombs," said Pruitt. "In technical terms, one might say that he was seeking a

'win-win solution' in which FC would have the impact he desires without further loss of life. Part of Tyler's letter seeks to find common ground with FC—ideas on which they both can agree."

Pruitt added that Tyler was clear in addressing the manifesto's main arguments while also suggesting alternative avenues.

"He does not attack, accuse or demean FC, as this would probably anger FC and make him less open to the message. Rather, he presents a reasoned argument for three propositions: that society is capable of evolving toward a solution of the problems raised by FC; that threats of violence are likely to hold back this evolution; and that the best way to encourage this evolution is to develop a new ideology that inspires a social movement," said Pruitt.

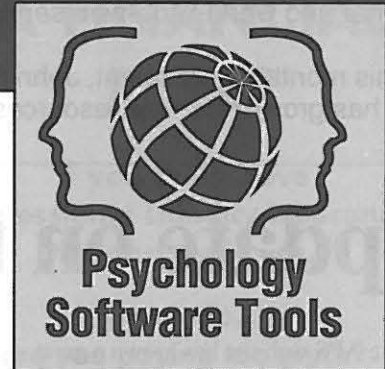
"The letter as a whole shows that Tyler has read FC's manuscript and taken it seriously and hence that he is according

[H]ow is it useful to promote social stress and instability, especially through acts of violence? My impression is that people react to violence by becoming less willing to change. How can you encourage people to think about your alternative ideology by creating fear and insecurity?

TOM TYLER
PROFESSOR
UC-BERKELEY

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The APS Internet Connection

THE APS INTERNET CONNECTION, an occasional *Observer* feature inaugurated in the March 1995 issue, is a practical guide to Internet-based information, products, and services of relevance to the scientific psychology community. This column will provide updates on APS's ongoing Internet services, including gopher and world-wide-web servers, and will herald important developments and activities in "cyberspace."

In this month's installment, John Krantz, APS's web site developer, explores how APS's world-wide-web site has grown, the new resources available, and how it can be valuable to psychologists as a research tool.

Update on the APS WWW Site

The APS web site has grown a great deal in the past year and it seemed appropriate to highlight some of the changes that have taken place. It is also the purpose of this article to give some sense of the direction of the development of these pages in the future.

To remind you of how to find the pages, the URL is <http://psych.hanover.edu/APS/> or <http://www.hanover.edu/psych/APS/aps.html>.

The homepage is simply an index to all the other resources available. Instead of one large homepage that could be slow to download, the information has been broken into separate pages indexed by the main page. This change should allow for quicker access from slower sites, especially those sites that access the Internet over a modem.

The page now also provides direct access to both APS and the maintainer of the pages. The homepage and those pages unique to APS are titled with the name of the Society. Clicking on the name of the Society will take advantage of the ability of most web browsers to send mail. This mail is sent directly to the APS main offices. In addition, every place that you see a symbol of a note with a push pin in it will send you to a form to send information and ask questions of the maintainer of the pages.

Here you can inform the maintainer of links that should be added that may be helpful to psychologists, such as department homepages and journals on-line. Since it takes so much time to find relevant resources, having others provide information is a vital way of keeping the pages up-to-date. In addition, many of the format changes made, including breaking the homepage into several parts, have been the

results of comments by users of the service.

The types of resources available have expanded. New resources include pages with links to other psychological societies on-line, links to Internet searches, and a page of psychological experiments being conducted on the Internet. The latter two resources are important enough to highlight.

A new service recently added to the APS pages allows users to register to receive automatic email notification when the pages are changed. Once an email address is registered, you will get a notice

informing you whenever the pages are updated. In addition, a "What's New" page has been added to keep users updated.

Getting around on the world-wide-web can be confusing, but ways to search the web to find sites with the information you want are increasing. APS now links into some of these services so users can better get around the web.

Most of these searches are full text searches of the documents on the web so that a match can be made to any part of the

CONTINUED ON NEXT PAGE

New Web Sites

National Institute on Drug Abuse

[gopher://gopher.nih.gov:70/77/gopherlib/indices/nih-guide/newguide/index?nida](http://gopher.nih.gov:70/77/gopherlib/indices/nih-guide/newguide/index?nida)

National Institute of Mental Health

[gopher://gopher.nih.gov:70/77/gopherlib/indices/nih-guide/newguide/index?nimh](http://gopher.nih.gov:70/77/gopherlib/indices/nih-guide/newguide/index?nimh)

National Institute on Alcohol Abuse and Alcoholism

[gopher://gopher.nih.gov:70/77/gopherlib/indices/nih-guide/newguide/index?niaaa](http://gopher.nih.gov:70/77/gopherlib/indices/nih-guide/newguide/index?niaaa)

National Institute of Child Health and Human Services

[gopher://gopher.nih.gov:70/77/gopherlib/indices/nih-guide/newguide/index?nichd](http://gopher.nih.gov:70/77/gopherlib/indices/nih-guide/newguide/index?nichd)

National Institute of Environmental Health Sciences

[gopher://gopher.nih.gov:70/77/gopherlib/indices/nih-guide/newguide/index?niehs](http://gopher.nih.gov:70/77/gopherlib/indices/nih-guide/newguide/index?niehs)

Division of Research Grants

[gopher://gopher.nih.gov:70/11/res/studysect](http://gopher.nih.gov:70/11/res/studysect)
[gopher://gopher.nih.gov:70/00/gopherlib/data/studysect/ABOUT.ROSTERS](http://gopher.nih.gov:70/00/gopherlib/data/studysect/ABOUT.ROSTERS)

The Society for Computers in Psychology

<http://www.lafayette.edu/allanr/scip.html>

The Society for the Psychological Study of Social Issues

<http://www.apa.org/division.html>

The Charles A. Dana Foundation

<http://www.dana.org/>

FROM PREVIOUS PAGE

document. Several allow for Boolean and other operations that can narrow your search. In addition, the entire web site APS is on is searchable. Thus, if you can not seem to find what you want easily via the organization, click on "Searches" on the toolbar at the top of the page and you will be taken to the page of searches where you can search locally or remotely.

The world-wide-web has become a valued research tool in recent months. APS, as a service to researchers, provides links to **psychological experiments** that are being conducted on-line. So far there are experiments in music (both cognition and perception), vision, and social psychology being conducted.

While the web will never replace the laboratory, it does add a new avenue to collect data and may prove to be a powerful new tool in psychological research.

In addition to the new services, the existing services have grown tremendously in the past year. **New links** are added usually every week. There are now more than 30 links to **journals** that have some sort of page on-line. There are more than 100 academic **psychology departments** with home pages, up from about two dozen last year.

The resources to researchers and teachers have grown as well and with the expansion comes reorganization. As the resources become larger these pages will be reorganized with an eye to keeping them as useful as possible. Your suggestions are welcome.

APS also plans to make its new teaching journal available on-line and, of course, the journal will be available via the APS web pages. When that journal becomes available, it will provide APS with a new and important presence on the web.

The APS web pages are growing and worth visiting more than once to see what changes have occurred. In addition, your suggestions and input are needed to keep this site a valuable one to the psychological community.

UNABOMBER FROM PAGE 12

FC 'voice.' If I were FC, this would encourage me to believe that other people will also do so, which implies that it is worth continuing to put these views in writing," said Pruitt.

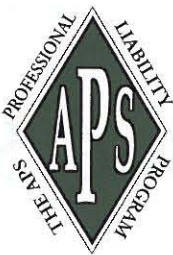
According to Grotz, Tyler's letter was not edited nor censored by the FBI. Grotz would not speculate on whether the Unabomber was expected to reply.

Tired of making bombs?

A letter from the Unabomber published by *The New York Times* April 26, 1995—two days after Gilbert Murray, president of the California Forestry Association, was killed by a Unabomber package bomb—may shed some light on why the self-described anarchist may be taking a different approach.

"...[W]e are getting tired of making bombs. It's no fun having to spend all your evenings and weekends preparing dangerous mixtures, filing trigger mechanisms out of scraps of metal or searching the sierras for a place isolated enough to test a bomb," the Unabomber wrote.

In the same letter, he also discussed misconceptions



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about Unabomb targets and the types of psychology he dislikes.

"Some news reports have made the misleading statement that we have been attacking universities or scholars. We have nothing against universities or scholars as such. All the university people whom we have attacked have been specialists in technical fields. (We consider certain areas of applied psychology, such as behavioral modification, to be technical fields.) We would not want anyone to think that we have any desire to hurt professors who study archaeology, history, literature or harmless stuff like that," wrote the Unabomber.

The Unabomber has targeted a psychologist before. James McConnell, a professor at the University of Michigan, was sent a mail bomb in 1985.

In late July, after Tyler's letter to the Unabomber was printed, the FBI sent copies of the manifesto to professors of psychology, sociology and of the history of science and technology, in hopes that a professor might recognize the arguments and be able to identify them as those of a former student or colleague. **E.R.**

FROM PREVIOUS PAGE

interpretation of the most salient and germane findings, relating them to existing research cited in the Introduction. Explanation is provided for differences in results between the present study and those previously reviewed. This section gradually broadens in its scope to include limitations of the present methodology, alternative explanations of the findings, suggestions for future research, and implications, when appropriate, for applied practice. It is important to remain modest in the assessment of the relevance of the findings to theoretical or applied problems while being concise and direct. The recommended practice is to limit speculation, avoid rationalization of nonsignificant statistical results, and focus on the most important findings related to the problem statement or hypotheses. All APA-style papers end with a References section that lists the sources cited in the report.

The remainder of this paper is divided into three areas: Typing instructions, citations used in the paper, and reference page construction. Instructions consist of a list of dos and don'ts with examples and referrals to the *Publication Manual* where appropriate. The paper concludes with a checklist to help ensure that APA style requirements are met.

Typing Instructions

1. For details not specifically addressed, refer to chapter four, pp. 235-257, of the *Publication Manual*.
2. Make margins uniform and a minimum of 1 inch on all sides. (Each page should contain no more than 27 lines of 12-point type using a standard font such as Geneva, Times, or Courier. Do not use special type styles such as script or italics.)
3. Typed and word-processed manuscripts should be left-justified.
4. Do not hyphenate words at the end of a sentence; end each line of text with a complete word.
5. Double space all lines including references.
6. Number all pages starting with the title page. Page numbers are located in the upper-right corner of each page 1 inch from the top and right margins. (For all practical purposes the first line of type on each page is reserved for the page number.)
7. All APA-style manuscripts have a title page. Information on the title page is centered left-to-right and should contain: The paper's title (10-12 words), name(s) of the author(s), and the affiliation of the author(s). If used, a running head of up to 50 characters is typed flush with the left margin at the top of the title page. The first two or three words of the running head will appear in the header of each subsequent page either 5 spaces to the left of the page number, or one double-spaced line above the page number (flush with the right margin).
8. Term papers and data-based reports have an abstract unless otherwise indicated by the professor. (Article summaries and critiques usually do not have either an abstract or running head.) The abstract is always on a page by itself (page 2 of the paper). Center the word "Abstract" at the top of the page. The abstract for a review paper is 75 to 100 words, while those for data-based papers range in length between 100 and 120 words. The abstract is a blocked (no indentation) paragraph that summarizes the content of the paper and does not exceed 960 characters.
9. Consistently and uniformly indent (either 5, 6, or 7 spaces from the left margin) new paragraphs.
10. Most papers will require headings when switching topics. Headings should be as brief as possible. (Note: The first section of a term paper, the introduction, does not have a

Example A: Title Page for a Term Paper

TEACHING TEACHERS TO USE BEHAVIOR MODIFICATION 1

Training Teachers to Use Behavior Modification
Ima A. Student
PSY 310A

Example B: Article Summaries/Critiques

Summary of Hummel, Abercrombie, and Koepsel's
"Teaching Students to Analyze Examples
of Classical Conditioning"
Ima A. Student
PSY 702B

heading.) There are five levels of headings used in APA-style manuscripts. Many papers use only one or two levels of headings. If a paper uses only one level, it should be Level 1 which employs centered words that are capitalized if they are four or more characters, verbs, pronouns, nouns, adjectives, or adverbs (prepositions and conjunctions are not capitalized). Papers needing two levels of headings should use Levels 1 and 3; Level 3 headings are underlined, and begin at the left margin. All headings should be brief and describe the section being introduced. Levels 1 and 3, as the following illustrates:

Level One

Level Three

Refer to pp. 90-93 (sections 3.30-3.32) and pp. 242-243 (sections 4.09-4.10) of the *Publication Manual* for more detailed directions on headings.

11. In general, words and phrases are not emphasized through the use of bold print, underlining, italics, single/double quotation marks, or all uppercase characters. Instead, writers must construct sentences so that emphasis is understood. The exceptions to this rule are described and illustrated in section 3.06, pp. 65-66, of the manual.

Citations

1. Each quotation is accompanied by a parenthetical citation that includes the name(s) of the author(s), the publication date, and the page(s) where the quotation is located. Follow the "5-word" rule: If 5 or more words from the source are used and in the same order in your paper, the rules for quoting need to be followed. All paraphrased works must also be cited parenthetically within the body of the paper with one exception: If summarizing/critiquing a single article, paraphrasing does not have to be referenced. Always paraphrase accurately. Citations for paraphrased works require the surnames of the authors and the date (one may also cite the page(s) where the paraphrased content is located). When a work has multiple authors the citation should link the last author's name with the others using the ampersand symbol (&) if the citation is in parenthesis; otherwise the word "and" is used (see examples A-D below).
2. Use only the sources that you have directly accessed. The first time a work is cited, all authors (if 5 or less) are cited in order, by their surnames. If the work has one or two authors, cite all of them by their surnames each time the work is cited. If the work has three or more authors, cite all of them in the first parenthetical reference. Later references will parenthetically cite the first author's surname followed by the expression "et al.," date, and specific page number(s) if the reference is a direct quotation. If the work has more than five authors, the citation consists of the primary author's surname followed by et al. All authors of the work are listed in the reference entry. When a point is made by multiple sources, alphabetize them using the primary

CONTINUED ON NEXT PAGE

APA Style Checklist

Typing Instructions

- Use one-inch margins (top, bottom, and sides).
- Double space all lines including references.
- Number all pages starting with the title page; page numbers located in upper-right corner of each page (not in margins).
- Title page information is centered (left-to-right), and includes: paper's title, author's name, and other required information.
- Abstract (2nd page; blocked 75- to 120-word paragraph).
- New paragraphs are indented 5-7 spaces from left margin.
- Headings are Level One (centered, capitalization of initial characters) and/or Level Three (underlined, flush with left margin, and capitalization of initial characters).
- Words/phrases are not emphasized using bold, single or double quotation marks, upper case characters, or underlining.
- Manuscript is left-justified.

Citations

- All works referenced are cited in manuscript.
- Citations for paraphrased content list author(s) and date (may list pages).
- Citations for quoted content list author(s), date, and page number(s).
- Dates and page numbers are always in parentheses.
- In-text quotations are less than 40 words, begin and end with double quotation marks ("") and usually are accompanied by a parenthetical citation before the end punctuation.
- Long quotations of 40 or more words are indented 5-7 spaces from the left margin, do not use quotation marks, and are followed by a citation after the end punctuation that must include page numbers.
- After the first citation (and in the 1st citation, if there are 6 or more authors), sources with 3 or more authors are cited by listing the 1st author's surname followed by the Latin expression et al.
- Quoted content does not cite or quote other sources.
- Quoted content follows the 5-word rule.

Reference(s) Page(s)

- The references are begun on a new page.
- The word "References" is centered at the top of the page on the line below page number.
- All sources cited (and only sources cited) are listed alphabetically. (Use author names as they appear on the publication cited.)
- Each reference is double-spaced. The first line of each reference is indented 5-7 spaces.

authors' surnames in the parenthetical citation, and separate them with semicolons.

Example of a Citation Listing Multiple Sources

Psychologists have been slow to develop behavioral taxonomies that classify processes and operations or behavior (Catania, 1984). Those classification and notational systems that do exist (Grant, 1964; Hall, 1976; Mechner, 1959; Millenson, 1967; Schoenfeld et al., 1972; Snapper, Kadden, & Inglis, 1982; Woods, 1974) are infrequently used (Catania 1984), and appear to be too detailed and complex for undergraduates enrolled in introductory courses to readily comprehend and use. (Hummel, Kaeck, Bowes, & Rittenhouse, 1994, p. 4)

3. Obtain permission to quote when necessary. APA-copyrighted works require written permission before using a total of over 500 words from that work. Quotations from a single source should be limited to fewer than 500 words.

Example A: Typical In-Text Citation

Although many behavioral scientists feel that punishment should never be used, Deitz and Hummel (1978) offer two situations where it may be ethical to use the procedure.

Example B: Another Typical In-Text Citation

There are two situations where punishment procedures may be warranted: When all other deceleration methods have failed or when the behavior is a clear and present danger to self or others (Deitz & Hummel, 1978).

Example C: In-Text Citation for Short Direct Quotation

Using punishment instead of other procedures to decelerate behavior is problematic. "Punishment should be reserved for only very serious misbehaviors and should be used only when other alternatives have been exhausted" (Deitz & Hummel, 1978, p. 81).

4. A complete quotation of less than 40 words should be incorporated within the paper's text, begun and ended with double quotation (i.e., " ") marks, and must be followed by a parenthetical reference citing the author(s), date of publication, and the page(s) where the quotation is printed.

Example D: In-Text Citation for Short Direct Quotation

Using punishment to decelerate behavior is problematic. According to Deitz and Hummel (1978), "Punishment should be reserved for only very serious misbehaviors and should be used only when other alternatives have been exhausted" (p. 81).

Quotations of 40 or more words must be presented (a) as an indented (5-7 spaces from the left margin) block, (b)

without quotation marks, (c) followed by a parenthetical reference that cites the page(s) where the quoted materials are located in the original work.

Example E: In-Text Citation for Direct Quotation Longer Than 39 Words

In schools, punishment is one of the most widely used procedures to decrease behavior because teachers are not familiar with other deceleration procedures, and because it works quickly and effectively.

The decision to use punishment should be made carefully. Special consideration should be given to whether or not the procedure can be implemented properly. If implemented correctly, punishment will reduce a misbehavior faster and more efficiently than any other reductive technique. However, in many cases, once the procedure is stopped, there is a high probability that the misbehavior will return to its original level unless the child has been taught alternate, desirable behavior that can be done instead of the misbehavior. (Deitz & Hummel, 1978, p. 96)

Example F: Direct Quotation Longer Than 39 Words

Punishment is one of the most widely used procedures to decrease behavior in school settings because teachers are not familiar with other deceleration procedures, and because it works quickly and effectively. Still, Deitz and Hummel (1978) do not advocate reliance on punishment:

The decision to use punishment should be made carefully. Special consideration should be given to whether or not the procedure can be implemented properly. If implemented correctly, punishment will reduce a misbehavior faster and more efficiently than any other reductive technique. However, in many cases, once the procedure is stopped, there is a high probability that the misbehavior will return to its original level unless the child has been taught alternate, desirable behavior that can be done instead of the misbehavior. (p. 96)

5. Quotations that cite or quote another copyrighted work should be avoided. However, if there is no alternative the guidelines presented on pp. 200-201, example # 22 of Appendix 3-A of the *Publication Manual* must be followed.
6. The use of ellipsis (...) points are not recommended. These are used when one omits part of an original source (i.e., when not quoting an entire sentence). Quotations out of context can be misinterpreted. If only a portion of a sentence is quoted, the directions on p. 97, Section 3.38, of the manual should be followed.
7. Footnotes are not recommended. If necessary, their appropriate use is specified on p. 163, Section 3.87, of the manual.

Constructing References

1. The list of references is always started on a new page.
2. The word "References" should be centered at the top of the page.
3. All sources cited in the manuscript must be listed in alphabetical order in the reference list.
4. References are not bibliographies. Bibliographies refer the interested reader to additional sources for further reading that were not specifically cited in the manuscript, and are not used in APA-style manuscripts.
5. Each reference is typed double-spaced. The first line of each reference is indented either 5, 6, or 7 spaces (the same spacing used in the paper to indent paragraphs).
6. The general format for a book reference includes the following components. First, all authors are listed (in the order in which the names appeared on the original manuscript) by their surname followed by the initials of their first and middle name (if known). The date of publication is presented in parentheses after the listing of authors, and is followed by a period. The underlined title follows the publication date, and only the first word of the title is capitalized with two exceptions: Proper nouns, such as a person's name, are capitalized and when the book's complete title uses a colon, the first letter of the word following the colon is capitalized. If the book is a second or later edition, after the title, in parentheses without underlining, the edition is indicated using the following type of abbreviations: (2nd ed.). The last component of a book reference is publication information which includes the city where the book was published and the name of the publisher (city and publisher are separated by a colon). If the name and location of the city are not well known, the city's name should be followed by the abbreviation of the state where the city is located. Information about the publisher should be as brief as possible (e.g., do not use Co., Inc.). Appendix 3-A (pp. 179-222) illustrates the many variations of book references (e.g., second and later editions, edited books, corporate authors).

Example of a Book Reference:

Deitz, S. M., & Hummel, J. H. (1978). Discipline in the schools: A guide to reducing misbehavior. Englewood Cliffs, NJ: Educational Technology Publications.

7. Journal references include many of the same components used in book references, and begins with a listing of the surnames and initials for all authors, separated by commas. An ampersand (&) is used instead of the word "and" before the surname of the last author. The date of publication, in parentheses, comes after the authors' names, and is followed by a period. Only the first word in the article's title is capitalized (again, proper nouns such as a person's name or use of a colon in the article title require additional capitalization). The article title is followed by period. The next

part of the journal reference is the name of the journal, underlined, with each word capitalized except for prepositions and conjunctions (e.g., of, and), followed by a comma, and the numeric volume number underlined. Issue number follows the volume number, in parentheses, but are only used when each issue of the journal begins with page 1; issue number is not underlined and there is no space between it and the volume number. A comma separates the journal's volume number and the inclusive range of pages where the article is published in the journal without the abbreviation "pp." or the word "pages."

Example of a Journal Reference:

Hummel, J. H., Abercrombie, C., & Koepsel, P. (1991). Teaching students to analyze examples of classical conditioning. The Behavior Analyst, *14*, 241-246.

8. The general format for a conference paper requires that the authors be listed the same way they are listed in book and journal references. After the authors' names the year and month of presentation, separated by a comma, is given in parentheses, followed by a period. After the presentation date is the title of the paper. It is underlined, with only the first word of the title capitalized (exceptions include proper names and the word following a colon). The title is followed by a period. The last part of a convention paper reference is a short statement naming the group to whom the paper was presented and the city and state (abbreviated) in which the meeting was held. Appendix 3-A (pp. 210-211) of the manual illustrates five variations for referencing presentations made at conventions including symposia and posters.

Example of a Reference to a Conference Paper:

Hummel, J. H., Huitt, W. G., Michael, R., & Walters, L. (1994, April). What you measure is what you get. A data-based presentation made at the annual meeting of the Southeastern Psychological Association, New Orleans, LA.

9. At present, the general format for referencing electronic media is: (a) author surnames and initials separated by commas in the order in which they appear on the paper, with the last author's surname connected to the others with an ampersand (&); (b) the date, in parentheses, of publication or copyright (if not available the date of the search is used) followed by a period; (c) the full title, underlined, of the source followed, in brackets, [], by a description of the nature of the source (e.g., on-line, CD-ROM) ending with a period, and (d) an availability statement that permits a reader to retrieve the document. Do not end the reference with a period.

CONTINUED ON NEXT PAGE

Examples of Electronic Media Reference:

Abstract.

Kerka, S. (1992). Family literacy programs and practices. [CD-ROM]. Abstract from: SilverPlatter 3.11: ERIC Document Reproduction Service No. ED 347 328

LaConte, M. A., Shaw, D., & Dunn, I. (1993). The effects of a rational-emotive affective education program for high-risk middle school students. [CD-ROM]. *Psychology in the Schools*, 30, 274-281. Abstract from: SilverPlatter 3.11: PsycLIT Item: 81-07567

10. The format for referencing a report deposited with the Educational Resources Information Center (ERIC) is: (a) author surnames and initials separated by commas in the order in which they appear on the paper, with the last author's surname connected to the others with an ampersand (&); (b) the date, in parentheses, of publication or copyright (if not available, the date of the search is used) followed by a period; (c) the full title, underlined; (d) the report number, if present, in parentheses, followed by a period; (e) the source of the report (city: state, organization) followed by a period; and (f) the document's ERIC number in parentheses. The reference does not end with a period.

Example of an ERIC Document:

Pollock, J. S. (1992). Chapter 1 early literacy summer school: Final evaluation report. Columbus, OH: Columbus Public Schools. (ERIC Document Reproduction Service No. ED 350 585)

References

American Psychological Association. (1983). Publication manual of the American Psychological Association, (3rd ed.). Washington, DC: Author.

American Psychological Association. (1994). Publication manual of the American Psychological Association (4th ed.). Washington, DC: Author.

Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). Taxonomy of education objectives, handbook I: Cognitive domain. New York: David McKay.

Catania, A. C. (1984). Learning (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.

Deitz, S. M., & Hummel, J. H. (1978). Discipline in the schools: A guide to reducing misbehavior. Englewood Cliffs, NJ: Educational Technology Publications.

Grant, D. A. (1964). Classical and operant conditioning. In A. W. Melton (Ed.), *Categories of human learning* (pp. 1-31). New York: Academic Press.

Hall, J. T. (1976). Classical conditioning and instrumental learning: A contemporary approach. Philadelphia: Lippincott.

Hummel, J. H., Abercrombie, C., & Koepsel, P. (1991). Teaching students to analyze examples of classical conditioning. *The Behavior Analyst*, 14, 241-246.

Hummel, J. H., Huitt, W. G., Michael, R., & Walters, L. (1994, April). What you measure is what you get. A data-based presenta-

tion made at the annual meeting of the Southeastern Psychological Association, New Orleans, LA.

Hummel, J. H., Kaeck, D. J., Bowes, R. L., & Rittenhouse, R. D. (1994, Summer). Diagraming operant processes. *The ABA Newsletter*, 17(2), 4-5.

Kerka, S. (1992). Family literacy programs and practices. [CD-ROM]. Abstract from: SilverPlatter 3.11: ERIC Document Reproduction Service No. ED 347 328

LaConte, M. A., Shaw, D., & Dunn, I. (1993). The effects of a rational-emotive affective education program for high-risk middle school students. [CD-ROM]. *Psychology in the Schools*, 30, 274-281. Abstract from: SilverPlatter 3.11: PsycLIT Item: 81-07567

Mechner, R. (1959). A notation system for the description of behavioral procedures. *Journal of the Experimental Analysis of Behavior*, 2, 133-150.

Millenson, J. R. (1967). Principles of behavior analysis. New York: MacMillan.

Pollock, J. S. (1992). Chapter 1 early literacy summer school: Final evaluation report. Columbus, OH: Columbus Public Schools. (ERIC Document Reproduction Service No. ED 350 585)

Schoenfeld, W. N., Cole, B. K., Blaustein, J., Lachter, G. D., Martin, J. M., & Vickery, C. (1972). Stimulus schedules. New York: Harper & Row.

Snapper, A. G., Kadden, R. M., & Inglis, G. B. (1982). State notation of behavioral procedures. *Behavior Research Methods and Instrumentation*, 14, 329-342.

Woods, P. J. (1974). A taxonomy of instrumental conditioning. *American Psychologist*, 29, 584-597.

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A similar manuscript, co-authored with **B. Christana Birchak** (Department of Arts and Humanities at the University of Houston-Downtown), based on the 3rd edition of the *Publication Manual* was originally published in Volume 2(5) of the *APS Observer* (1989, pp. 14-16). Readers are encouraged to request reprints of the current article from APS.

Correspondence concerning this article should be addressed to John H. Hummel, Valdosta State University, Valdosta, GA 31698-0100. Electronic mail may be sent via Internet to: jhummel@grits.valdosta.peachnet.edu.

Top Universities in Psychology Ranked by Output and Impact

Using data from literature citations, programs are ranked for the period 1990-94

Evaluating the research performance of an individual or an institution can be tackled in many ways. For example, peer review of grant proposals and publication submissions to journals provide an ongoing form of evaluation, though the often proprietary nature of such information precludes it from being collected in a systematic and centralized location for easy examination.

And, of course, people have their intuitive and even some data-based assessments and prejudices about the quality of research performance of a given institution or scientist, but what we examine in this article is a semi-objective method to measure this somewhat elusive quality.

While peer review doubtless remains the "gold standard" in research evaluation, assessments that use publication and citation analysis can add useful background and depth to evaluations of research productivity.

What is publication and citation analysis? In its simplest form, it consists of counting how many publications were produced and how many times those papers were cited in the scientific literature over a given period. The publication count can be used as a measure of output or productivity, while the citation count is a measure of significance, utility, and importance. A large number of citations does not invariably signal quality, which requires human judgment, but, rather, indicates that a work has attracted considerable research interest.

Expert Judgment vs. Citation Analysis

Still, the sociologist Stephen Cole of SUNY-Stony Brook conducted a study of the correlation between expert judgment of an individual's work and that individual's standing according to citations. The correlation in psychology ($r = .55$) was "strong for social science research and demonstrates that citations

are good rough indicators of the quality of work as it is perceived by one's scientific colleagues."¹

Yet another study found that citation counts show better agreement with the judgments of each expert than the experts' averaged judgments show with each other.² The more aggregated the data being examined, of course, the more robust are the conclusions that can be drawn, since artifacts (such as negative citations, which typically occur with a frequency of just a few percent) become "background noise."

Most Cited Psychology Papers

Recently, the Institute for Scientific Information (ISI) identified the 100 most-cited psychology papers of each year from 1981-94. These papers—and their citation counts through 1994—were placed into a relational database, allowing specific attributes of each paper to be searched, linked with others, sorted or ranked, and presented in a table or chart. The table below lists the top dozen universities represented in this database during 1990-94.³

There are three definitions of "top" used here: *number of highly cited papers produced* (output); *number of total citations* (gross influence); and *citations*

Top Institutions in Psychology, 1990-94

(based on 500 highly cited papers)

Rank	# of highly cited papers (output)	# of total citations (gross influence)	# of citations /paper (impact/influence)
1	Michigan 19	Michigan 759	Arizona 72
2	Harvard 19	Toronto 611	UCSF 53
3	Pittsburgh 16	CMU 521	Toronto 51
4	CMU 14	Arizona 507	NYU 46
5	Oregon 14	Berkeley 499	UCSD 41
6	Berkeley 13	UCSD 486	Michigan 40
7	UCLA 13	Oregon 456	MIT 39
8	Minnesota 13	Pittsburgh 451	Berkeley 38
9	Toronto 12	UCLA 430	CMU 37
10	UCSD 12	Minnesota 385	Rutgers 36
11	Wisconsin 12	Wisconsin 382	Washington 35
12	Illinois 12	Harvard 354	Miami 35

SOURCE: ISI's High Impact Papers in Psychology, 1981-94.

* Ties were broken by total number of citations.

SEE UNIVERSITIES PAGE 28

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UNIVERSITY FROM PAGE 24

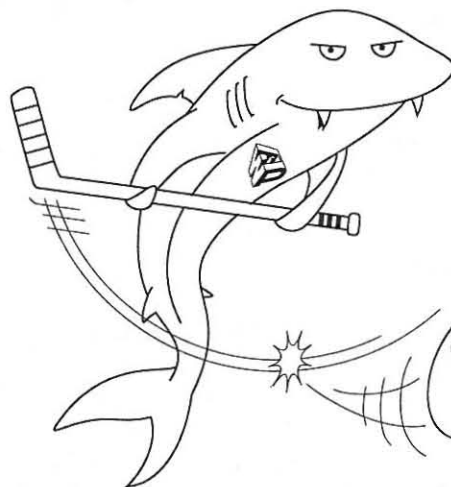
per paper (impact or average influence). In the last ranking, only those universities that produced five or more highly cited papers during 1990-94 were listed. These figures do not represent all the psychology papers produced by these institutions—only their most-cited papers.

References

1. S. Cole, in C. Frankel, ed., *Controversies and Decisions: The Social Sciences and Public Policy*, 1976.
2. J.A. Virgo, *Library Quarterly*, 47: 415-30, 1977.
3. The database is called High Impact Papers in Psychology, 1981-94 and can be installed on an IBM-compatible PC running Microsoft Windows. An ISI graphically oriented program permits quick identification of the most-published or most-cited papers, persons, institutions, nations, or journals, for the entire period or for particular years.

In addition to the High Impact Papers in Psychology database, ISI has developed two information services in cooperation with the American Psychological Society: **Focus On** and **Personal Searcher**. Both products are offered via the internet. **Focus On** offers pre-defined coverage of current psychology information. There are six separate Focus On products. Each is delivered monthly at a cost of only \$169/edition for APS members (\$225 for non-members). **Personal Searcher** is a customized search service. Working with an ISI information specialist, you select the search terms that are relevant to your research. Delivery is daily, weekly, or monthly. The 1995 cost is \$221 for APS members (\$295 for non-members). To obtain more information about these products or to place an order, call ISI at 1-800-336-4474, extension 1483.

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NASA FROM PAGE 8

O'Connor, "and that added to the stress of feeling like the 'Lone Ranger' in adhering to what he was supposed to do."

Delays of the Shuttle and other complications extended Thagard's stay about three weeks beyond what had been planned. However, Thagard said the delay was not a significant problem, since he personally had wanted to pass the 100-day mark in space anyway. More important, he knew there were practical limits of the mission's duration and that potential delays would be limited by backup plans.

Long-Duration Flight Is Exceptional

Even longer term space missions will present complications for communications, admits Thagard, and "from a psychological standpoint, going to Mars [a two- to three-year round-trip] is a whole different ball game than flying in low-earth orbit." But Thagard asserted, "In many ways, as long as the situation is normal on board the spacecraft, I think psychologically it's easier to go to Mars than to spend the same amount of time in a low-earth orbit," because a flight to Mars represents to him a more goal-directed task. To Thagard, "the single most important psychological factor on a long-duration flight is to be meaningfully busy. And, if you are, a lot of the other things sort of take care of themselves."

But Thagard said an emergency situation would present very different demands from the nominal situation and that one thing NASA has not attended to in the last couple of years "is the psychological aspects. We did it in planning for space station Freedom by bringing in groups that included those with Antarctic and submariner experiences, but we quit doing it in the last couple of years. Yet, the task for the Alpha station, with its international crews, is even more complex psychologically than that of Freedom, which, in spite of our partnership with Japan and European countries, was essentially an American station."

Multidimensional Space Culture: Scientist, Pilot, and Nationals

"I had a lot of built-in advantages to my flight. There is a whole different psychological environment that goes along with knowing you are only going to be there for three months versus knowing you're going to be there for six months or a year certainly." During a six-month flight or on a three-year mission to Mars "you can't use those kinds of [thinking

techniques] ... that just doesn't work," said Thagard.

To help deal with in-flight emergencies, Thagard said, NASA also should have on its agenda some "attention to crew interaction and compatibility, and you have to actually look at the psychological status of the individual crew members." Thagard says that this is done now to a degree but that NASA must continue to reinforce those efforts to select crew carefully and to "pay attention to [psychological] factors when we are talking about long-duration spaceflight." The majority of mission specialists have a piloting background, and they have necessarily "been in challenging, even hazardous, situations," he said. "These are folks that appear in general to have a good operational sense. They are not so much theoretical scientists as they are practical people. Engineers and that sort. People who do well in an operational environment as opposed to in a research lab...."

Trust

But what of the increasing participation of scientists in future space missions? O'Connor admitted to having padlocked the exit hatch on board the 1991 Columbia shuttle mission he commanded and to having provided the lock combination to only two other nonscientist mission specialists on board, because he simply didn't know the two scientists ("payload specialists," in mission parlance). He knew that "the payload specialists don't go through all this psychological screening...and you don't know them as well because they come late in the flow. I knew everyone else for seven to nine years." O'Connor was not comfortable with the fact that there is not the same opportunity to "really get a feel for the payload specialists and understand them and to know what they are going to do in a real emergency, for example. So when you say 'trust,' I don't have the same trust of them as I did the NASA-trained people." Also, the scientists had not endured the same kind of rigorous military pilot-training background.

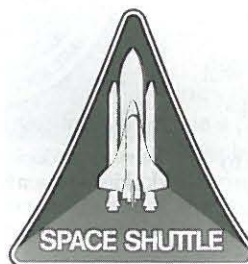
The hatch in question was near a high-traffic research area, and O'Connor wanted to avoid accidental or deliberate opening of the hatch while in orbit. O'Connor pointed out that on his first flight, the commander also had padlocked the hatch, as an added safety measure.

Comparing scientists with operational crew (pilots and navigators), O'Connor said that he noted then that scientists are more questioning, skeptical, and rebellious. Asked whether that affects the operational crew, O'Connor said that "the longer the astronauts were in Houston, the more tolerant they became of the 'scientist' attitude. That is not a common trait among military pilots (questioning and rebelliousness), though Marines often say pilots are that way. It is all relative. But as a commander of a mission full of scientists, sometimes I felt I was herding chickens, trying to get them all to go the same way."

Training and Selection Changes?

O'Connor believes that the extensive and long-term training (e.g., survival) and experience that military pilots accrue (both in teams and individually) over the years and the grueling astronaut training were an excellent screening system that should simply be extended. "For longer missions, we need to just pick up that [training] process we had for the Shuttle program and refine it, modify it to allow us to better screen out people who aren't going to do well in a long spaceflight." Because of the diverse personalities among the crew in his second mission, O'Connor said, the trainers initiated "sensitivity training at Houston [astronaut school], and I would think that would be even more important for international crews" because of the lack of a shared culture.

The sensitivity training he received emphasized awareness and understanding of the characteristics of different personality types in relation to key areas such as communications, needs, and teamwork. In those early days, the astronauts learned about "the kinds of things that turn people on and turn people off, so that as a crew we would have a better feel for the best way to communicate...and to know how to react in a tough situation. The bottom line for me," said O'Connor, "was a greater acceptance of people that aren't the same as me. I had never been through any of that kind of training...the training was beneficial, very helpful." O'Connor said that kind of awareness "helped my crew get through some things, and I know it helped other crews as well."



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Long-Term Commitment

Thagard had spent one year in Star City, Russia, learning Russian and preparing and training for the mission, and launched on a Soyuz rocket from Kazakhstan with cosmonauts Vladimir Dezhurov (the Commander), 32, and Gennady Strekalov, 54. Inaugurating a massive two-decade-long joint US-Russian research effort in long-duration flight, they docked with Mir to begin the first of a three-month mission in low-earth orbit (i.e., about 200 miles up).

Struggling to preserve their respective space programs, both countries benefit from the joint program. Russia hopes to keep its space program afloat in part by the \$100 million it will receive annually from the United States through 1997 in exchange for US use of the Mir and research data collected there, according to *The Washington Post*. The US Shuttle will ferry astronauts there, with dockings scheduled over the next few years. Stays of US astronauts will last up to 21 months.

Minor Crisis

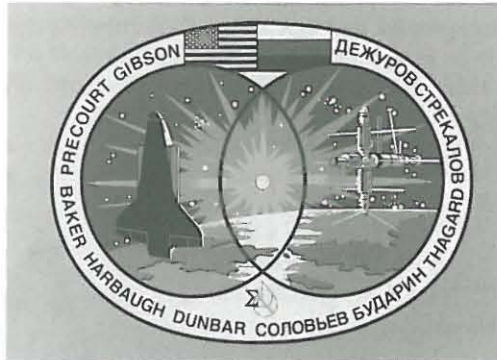
Though not an emergency, Thagard experienced an emotionally awkward situation on Mir when news arrived that cosmonaut Dezhurov's mother had died. Looking to Strekalov for cues on how to respond to Dezhurov, Thagard realized that a similar consoling response from him as an American might not be appropriate. "I didn't know quite how I should react in that situation," said Thagard. On Strekalov's advice, he didn't intervene.

Weightlessness

While the focus of Thagard's research on Mir and Atlantis was the long-term physiological and behavioral/performance effects of weightlessness, the potentially weighty behavioral/psychological issues may become the legacy of this latest historic international space mission. In fact, reports were that Goldin was to have met with Thagard personally presumably to discuss such issues, but as of this writing, Thagard said no such meeting has occurred, and he has not heard from Goldin on this issue.

But, speaking in April about shaking up the space agency—in the context of recent efforts to "reinvent the federal government"—Goldin stated at the first Life Science and Space Medicine Conference that NASA must do things differently

in order to achieve the goal of making long-duration space travel a reality, according to the April 28 *Science*. What does this mean for psychological research? It's hard to get a handle on that, but during his speech Goldin emphasized the importance of peer-reviewed research and collaboration of NASA researchers with investigators at the National Institutes of Health and in industry. There is a little-known collaborative program ongoing between NASA and the National Institute of Mental Health under the rubric of the



Crew patch depicts orbiter Atlantis in first international docking mission of the Shuttle with the Russian space station. Rising sun symbolizes the dawn of a new era of cooperation between the two countries.

Human Brain Mapping project. However, only one researcher is receiving funding through that program. The researcher, Alan Hobson of Harvard University, is developing a head cap to measure sleep EEGs to assess state-dependent aspects of cognition, said David Liskowsky, an Associate Research Scientist with the University Space Research Association, a contractor to NASA's life sciences division.

In addition, among the 32 grants recently approved for research aboard the 1998 NeuroLab mission (see September 1993 *Observer*, p. 37), there is one behavioral scientist, Tracey Shors of Princeton University, who will examine the effects of spaceflight stress on learning. But there is a fair amount of ground-based human factors research ongoing at NASA, especially at the Ames and Moffet Field research centers in California, where nearly 15 APS members work. One longstanding difficulty NASA faces, though, is a strong "turfism" that can slow or prevent basic research from informing policy and application.

Implications for Research

Following this latest mission, NASA administrators have a heightened sense of the importance of behavioral research—

from human factors to cross-cultural communication in team decision-making contexts—according to several NASA staff (from the ranks of researchers and program administrators to division directors). O'Connor said that before Shuttle-Mir, "behavioral research at NASA was invisible to me by and large. It's the acceptance of longer duration flights and multi-cultural flights—which has happened in the last couple of years—that is creating a lot of questions by the operators about this kind of research" and causing a more serious look at it.

How might this translate in terms of support for behavioral research? There is not likely to be a surge in R&D funding for such research in today's economic climate, all NASA staff concurred. However, several agreed that there may well be a proportional increase in money for behavioral and psychological studies, which in FY95 commands about \$2 million in ground-based research, according to NASA's Frank Sulzman, Deputy Director of the Life and Biomedical Sciences and Applications Division. NASA currently funds all its biomedical and biological research through this division. The Division funds about 20 principal investigators presently, and, of those, about four are behavioral scientists.

APS member and NASA staffer Marc Shepanek is developing a workshop for early November to bring academic researchers together to begin to develop a research structure and agenda for classifying and evaluating analog environments (e.g., polar areas, submarines, expeditions, virtual environments, even Mir).

These environments will be assessed for their usefulness and affordability for researching some of the human and other factors that contribute to successful long-duration space missions. The project is being conducted by the Space Research Institute at George Washington University and will have a completed report in 1996. "This is a real attempt to give policy-makers a balanced, rational tool derived from NASA, academia, and industry, and involving psychologists, engineers, and physiologists, for example," said Shepanek.

But a fair amount of human factors research (about \$2 million) is also conducted at research posts such as Ames, in the Human Factors Division. Mostly aviation-related (rather than space-related) behavioral research goes on there. APS Charter Member Judith Orasanu, in the Crew Factors Research Branch at Ames,

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has been doing extensive fundamental work precisely on the issue of mixed-culture crews on aircraft, especially in relation to culturally appropriate communication. Related studies of multi-cultural pilot crews by APS Fellow Robert Helmreich and APS member Ashleigh Merritt aim also at understanding attitudes toward leadership and power-distance in order to develop ways to improve crew performance and flight safety.

Many developing countries have hired American and European pilots (formerly with now-defunct or ailing airlines) to captain their domestic craft while they develop their own homegrown pilots. Thus, international crews are becoming commonplace, as are the potential conflicts deriving from culture-related misunderstandings, cultural differences in individualism and collectivism, and reduced team cohesion, among other issues.

Orasanu and collaborator Utta Fisher are initiating a study with Lufthansa and



Norman Thagard (left), Vladimir Dezhurov, and Gennady Strekalov practiced for their joint mission in the Recumbent Seating System at Johnson Space Center in Houston.

Swiss Air to look at socially and culturally appropriate ways for crew members to communicate with each other, especially in relation to flight problems. Another APS member, Barbara Kanki at Ames, will work with Orasanu to get baseline data on diverse English-speaking mixed-culture crews in an attempt to understand

better the pragmatics of communication—those “invisible ways of doing business during interaction,” said Orasanu.

Another project just getting under way is an examination of long-duration isolation and team performance and decision making in the Antarctic environment. Orasanu expects this three-year project with collaborator Daniel Serfaty to have direct implications for space travel.

Many of these current research issues were identified and characterized in the 1985 classic, *Living Aloft: Human Requirements for Extended Duration Spaceflight*, by NASA psychologist Mary M. Connors and co-authors A.A. Harrison and F.R. Akins. Even during the seven-year period during which the book was written, NASA was not benefiting from the small and fragmented research it was sponsoring then. The book attempted to bound the human research problem and is still being used by people in the field, said Connors, an APS member. Now the Assistant Branch Chief of Aviation Operations, where Connors primarily works on human automation interaction relating to the National Plan for Civil Aviation aimed at overhauling the air traffic control system.

She said that “in the early days, the crew selection process began as fairly scientific from a psychological perspective.” But most of the psychological tests being given were not that useful. The process was winnowed down to only a few tests and then evolved to rely heavily on very successful techniques using interviews and observation of performance during training, she said. “But now NASA is moving back a little in the other direction, to sharpen the selection process through objective but less labor-intensive methods, because they will be looking at more diverse people.”

New Ideas

In response to the question as to where NASA should focus its psychological research money, Thagard concluded, “We certainly need to know how to pick crews that would be compatible” for a long-duration Mars mission, for example. “I’m not sure we know how to do that right today.... We do have to get experts to help us with this. These are potential problems we cannot ignore. You simply cannot have a situation where the crews fall apart after a short while in space.... I do think that the psychology of long-duration flight is something we have got to very carefully consider, especially in an era where there will be cultural differences, and multi-

national crews.” Thagard commented that the international crews context demands extensive language training. “I think the more language training and proficiency you have before you fly, the better off you are.”

When asked about where Thagard’s experience might direct NASA, Harry Holloway, NASA’s Associate Administrator for Life and Microgravity Sciences and Applications, said that Goldin had it right: “[Thagard] went up with the explicit purpose of identifying and defining problems, and he came back down having done that. It is exactly what we had asked him to do.” NASA regards these as serious issues, Holloway said. “The amount of isolation, the prolonged duration, and the overall need for a structured process of providing support—these were not big surprises. But now that we have actually tested the structure with solid experience, we can have a better focus.”

He said that “there are a number of topics that cut to issues that psychologists have a particular expertise in. For example, the social communication use of posturing and signaling—both are radically changed in space. Body orientations are radically changed in microgravity,” presenting research challenges that need to be pursued as we learn more about how to live and work in space.

Of the three to four areas that impede us in space (bone loss, radiation, life support for long duration), it’s the overall composition and selection of crews that emerges as important to the design of the whole exploration initiative on the space station.

This is certainly an area on which we anticipate some greater emphasis, said Holloway, “because we are moving to a new platform with a new set of demands on the astronauts from various nations.”

O’Connor stated that astronaut training needs to be broadened to include both personality and cultural sensitivity training. “I think we ought to continue with sensitivity training not just with personality types but also cultural differences, so that people are not necessarily collecting red stamps against each other. The more aware you are of differences, the more easily you’ll accept them, and that ought to be part of the training. I don’t know how well we do that now.” ♦

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today, Bjork said that "In some ways we're in remarkably healthy shape. But it's also a somewhat confused time as the field is being pulled in different directions and reorganized. Interdisciplinary approaches, such as cognitive science and behavioral neuroscience, amount to new ways to examine problems that fall within the traditional scope of psychological research."

Bad Timing

To those who want to cut federal support for basic research, as has been proposed in the US House of Representatives (see July/August 1995 *Observer*), Bjork would say such cuts are extremely short-sighted: "Aside from considerations of evenhandedness, the timing would be terribly bad from the country's standpoint, because I think the important new technologies are going to be human technologies. We're in a new, broader era of human factors."

"Engineering technologies have had terrific impact, and will continue to," he says. "But what will determine if particular computer companies sink or swim, for example, is their success in improving the people-machine interface. Issues like creating community, fostering teamwork, developing organizational efficiencies—are crucial, too."

"The development of human technology—changes in instruction, school systems, company structures, global competition, and the impact of technology in terms of how a network should be structured, or how one should best do business at home on a computer—these are things having to do with very basic cognitive and social psychological interactions. This is a bad time to limit our access to that kind of research," said Bjork.

Doing Important Things

Bjork reports being "gratified to have been nominated and elected to" a term on the APS Board of Directors. "APS is trying to do very important things," he said. "Certainly, the Society represents an attempt—among other things—to foster interactions between basic researchers and people applying that research. I identify with that part of APS's mission and the other dimensions of APS's mission, which makes being on the Board and confronting the Society's challenges a very worthwhile activity."

Sechrest: Time to Apply

Lee Sechrest was also elected to a three-year term on the APS Board starting in June. One of the nation's leading figures in health services research, Sechrest describes his primary interest as "the development of better methodologies of studying the problems psychologists deal with, especially problems of applied research and research in field studies."

Sechrest has been Professor of Psychology at the University of Arizona for more than ten years and was head of the Department of Psychology for five. A Charter Fellow of APS, Sechrest is "very pleased" to serve on the Board. "I have always been very firmly committed to the goals of APS, and my interest in having applied science represented made me willing to run," he explained.

The Value of Research

Sechrest's research in methodologies and data analysis is conducted in different field settings, and includes program evaluations and assessment. He has done a substantial amount of work on the organization and delivery of health and mental health services.

How is this area of research faring on Capitol Hill? "Not as well in the new Congress as we would have hoped," said Sechrest.

"I think there are too many members of Congress whose main interest is in cutting the budget, and they have little concern, little regard about where the cuts come from. They don't see what they're hurting, what damage they're doing. Also, there are people in Congress and some in federal agencies who don't understand

research and its value," he said.

For example, continued Sechrest, "AHCPR [the Agency for Health Care Policy and Research] does a lot of research critical to the nation's health, although there's a perception that its only mission is to save money. The same with the Veterans Administration R&D. The interest is improving health care and in making sure that we don't distort the health care system, so that we don't end up saving money at the cost of health."

"We haven't succeeded in getting across the message to people in Congress," said Sechrest. "Maybe they don't see the problems because they have good health care coverage. But their relatives and constituents have every right to be concerned about quality of health care."

Recently,

Sechrest was in Washington to review proposals for centers having to do with drug abuse services. "Every indication is that there are going to be cutbacks in treatment for people," he said. "Programs are being terminated and funds aren't being provided for drug abuse treatment services."

This flies in the face of a considerable body of research that shows the cost effectiveness of treating drug addiction, notes Sechrest. "Even though we don't know how to treat all addicts with a high degree of success, we can reach some."

But beyond the economic and scientific imperatives for maintaining services, Sechrest also feels strongly that there is a moral imperative. "Drug addiction causes enormous misery, both to those who abuse drugs and the people around them. Just on a humane basis, it's important to reach out to them," he said.

Matching Progress

Sechrest wants to see applied research progress at a rate that matches "the impressive progress seen in basic research in psychology. I'm very impressed with the progress that has been seen in basic work in memory, and other cognitive functions, understanding how the brain and the mind work, and some of the areas in health psychology such as effect on immunology and so forth, progress made in behavioral genetics. All of that research is important—it is absolutely fundamental to the contributions that psychologists can make in applied settings."

That's not to say that gains aren't being made in applied research. "I think we are making important progress in applied research in the social sciences," said Sechrest. "Where we aren't making progress, it isn't the result of the researchers," he said, "it's the result of the lack of commitment and imagination of people who should be supporting new programs."

More generally, Sechrest comments that "over the years I've been impressed with the power of psychological concepts and theories that can be brought to bear on problems, to help people sort out their thinking. Psychologists have a systematic way of thinking about problems and about the determinants of behavior that is invaluable. We have to keep up the rigorous nature of our training, training people how to think about problems, and then bring the concepts to bear." *Sarah Brookhart*



Lee Sechrest (right) with APS Past-President Marilyn Brewer.

Richard Thompson became APS president in June. His first Presidential Column appears on page 2. See the July/August 1994 *Observer* for a profile of Thompson.

Teaching Tips

TEACHING TIPS provides the latest in practical advice on the teaching of psychology. TEACHING TIPS is aimed at current and future faculty of two- and four-year colleges and universities.

Complementing the Annual APS Institute on the Teaching of Psychology, TEACHING TIPS will inform teachers about the content, methods, and profession of teaching. Chief editor Baron Perlman and Co-editors Lee McCann and Susan McFadden, all of the University of Wisconsin-Oshkosh, welcome your comments and suggestions.

Send article ideas or draft submissions directly to Barry Perlman, TEACHING TIPS Editor, Dept. of Psychology, Univ. of Wisconsin-Oshkosh, Oshkosh, WI 54901-8601; Tel.: 414-424-2300; Fax: 414-424-7317, Bitnet: PERLMAN@OSHKOSHW; Internet: PERLMAN@VAXA.CIS.UWOSH.EDU.

The Use of Extra Credit in Teaching

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University of Southern Indiana
 G. William Hill, IV
Kennesaw State College
 John C. Norcross
University of Scranton

Practically all faculty members have been approached by students requesting opportunities to earn extra credit. These requests appear to increase in frequency and urgency as the term comes to a close and students realize their potential grade is lower than they would desire.

Suddenly, previously disinterested students come to life, show interest in the course material, and request opportunities to prove to the instructor that their abilities and knowledge are above that currently indicated by their grade. But opinions on granting these requests, as well as the appropriateness of extra credit itself, vary widely among faculty and students.

◆ Attitudes Toward and Advantages of Extra Credit

A survey of faculty members' and students' attitudes toward extra credit found that approximately 75 percent of

the faculty respondents in a variety of disciplines did not currently offer extra credit and 21 percent thought it should never be offered (Norcross, Horrocks, & Stevenson, 1989). A follow-up study (Norcross, Dooley, & Stevenson, 1993) found that an instructor's general attitude toward extra credit, rather than the circumstances of the individual case (e.g., illness, English as a second language), largely determined whether it was provided.

Norcross et al. (1989) also reported that faculty members and students see different advantages and disadvantages of extra credit. For example, students are more likely to see extra credit as a second chance while faculty members view it as an opportunity to explore a topic in depth. Both faculty and students agreed, however, that the major disadvantages of extra credit are that it tends to encourage a lax or irresponsible attitude and that it is unfair when offered only to selected students.

◆ Specific Extra Credit Opportunities

Hill, Palladino, and Eison (1993) extended the Norcross, et al. (1989, 1993) inquiry by surveying faculty members concerning specific extra credit

opportunities rather than attitudes toward extra credit in general.

They compiled a list of 39 actual extra credit opportunities, including participating as a research subject, summarizing an article from a professional journal, attending and summarizing a lecture by a visiting speaker, donating blood, and correctly answering trivia questions unrelated to course content on exams.

Psychology teachers ($N=91$, all members of the APA Division on Teaching of Psychology) rated each of the extra-credit opportunities on the following: likelihood they would use the extra credit opportunity, educational value, and equality of access for all students.

In general, items with high ratings for educational value tended to be the ones that faculty would be likely to use. The top two in terms of educational value were participating as a research subject and writing a research paper.

This study also revealed a relatively high rate of use of extra credit by psychology teachers (82 percent used it to some extent), which probably reflects the common practice of offering extra credit for participating in faculty and upper-

level student research.

◆ **When and When Not to Use Extra Credit**

Two significant issues concerning extra credit can be identified: educational (pedagogical) value and equal access to extra credit (ethical).

Let's use donating blood as an example. Almost all would agree that donating blood is an admirable and socially desirable deed. However, its relationship to the typical goals of a college class is unclear and somewhat questionable.

In *The Ethics of Teaching: A Casebook* (1993) Patricia Keith-Spiegel and her colleagues write, "Professors must justify why extra (as in 'outside') credit is appropriate, and assignments should be pedagogically sound. 'Good deeds,' while having a laudable place in one's personal moral philosophy, are not proper assignments for academic credit unless they are related directly to course content," (p. 45).

Moreover, such an extra-credit opportunity is not accessible to all students. Some students are unable to donate blood, and thus unable to avail themselves of this opportunity for medical reasons (e.g., anemia, hemophilia, hepatitis), religious prohibitions, or psychological reasons (e.g., fear of blood or needles).

Ethical guidelines require us to offer alternative ways for students to earn credit that are equal to that offered for research participation, if for some reason the student cannot morally or ethically participate. A similar approach should be followed for extra credit.

◆ **A Pedagogically Sound and Ethical Extra Credit Assignment**

Among the multitude of extra credit possibilities, a few merit special consideration by those who want to offer extra credit. For example, faculty members often do not assign all of the chapters in an introductory text because there is not enough time to cover them. Thus, some material will not be presented in class nor included in exams.

Extra credit could be awarded for correctly answering multiple-choice questions that cover the unassigned material. In some cases the points are earned only if the student's score is well beyond chance-level responding. Compared to many extra credit opportunities, this one appears to be pedagogically sound, is accessible to all students, and can be implemented by simply adding items to an exam.

◆ **Guidelines for Using Extra Credit**

Should one desire to start a verbal brawl in a university faculty club, the desirability of extra credit is appropriate incendiary material.

Whatever position one holds on the matter, the research (Hill et al., 1993; Norcross et al., 1993) indicates that many psychology faculty are currently using extra credit as a component of their grading and will continue to offer it in the future.

Therefore, we would like to offer several guidelines to consider when offering and implementing extra credit.

- Make extra credit available to all students in the class, build it into the course structure, and describe it in the syllabus. These practices mute criticism that extra credit is selectively and covertly provided to a few, possibly undeserving, students.

At the same time, this avoids access problems due to time constraints when extra credit is offered late in the semester and enables faculty members to build it into their overall grading scheme.

- Select extra credit opportunities that are pedagogically sound and clearly connected to the course content. It is difficult to justify the use of extraneous or frivolous extra credit opportunities like giving blood or adopting a pet to either your students or your colleagues.

- Provide several choices of extra credit opportunities. These choices should be roughly equivalent in effort required, time commitment, and pedagogical value.

This equity allows students to choose which opportunities they complete. In addition, this procedure corresponds to

our ethical guidelines for alternatives to research participation.

- Explain to your students (and yourself) why you are offering extra credit.

Is it for pedagogically sound reasons? Is it intended to enhance the students' educational experience or is it simply "make-up" work to improve their grade? Well considered and rational reasons for offering this opportunity will blunt colleagues' questions about whether you are contributing to low standards and grade inflation with such practices.

- Address how much extra credit is appropriate. This is a difficult matter to resolve, but one general rule of thumb is that the points available from extra credit should be no more than 5 percent (some faculty argue for up to 10 percent) of the total possible number of points for the course. This restriction may help address the concern that extra credit encourages a lax or irresponsible attitude among students.

- Examine carefully your choices of extra credit assignments. If your extra credit opportunities are pedagogically sound, should they be included as required assignments? Are you potentially devaluing an assignment in the eyes of your students by relegating it to extra credit? This may be particularly problematic if, for example, writing assignments are designated as extra credit.

- Reflect seriously on the purposes of your grading. Your grading rationale will in turn influence your decisions concerning extra credit. If grades are a reward for hard work, for example, then it seems fair to offer students additional chances to work hard to master the material and boost their grades.

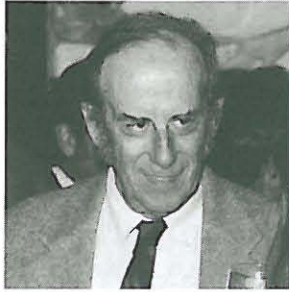
Alternatively, if grades are quantitative estimates of subject mastery, then allowing students to

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Obituaries

Visual Perception Pioneer Irvin Rock (1922-1995)

On Tuesday, July 18, Irvin Rock died from pancreatic cancer at his home in Berkeley, California. The disease was diagnosed in late December, and from that day, almost until he died, he continued to work and to write, despite the increasing weakness and bouts of pain, fortunately relieved by morphine.



In that time he completed one book, *Indirect Perception*, to be published by MIT Press, and worked on another which he and I were writing together, also to be published by MIT Press. He also completed a long and important chapter, "Intelligence of Perception" in *Looking At Looking*, a book being edited by Ted Parks. This book updates his thinking on a subject that first appeared in his widely-referred-to and influential book, *The Logic of Perception*. But that was not all that Rock achieved in that short time. He also wrote and revised several research papers for publication and continued to be actively involved with research with various collaborators and students.

Anyone who is familiar with the ravages of pancreatic cancer and the rapidity of its course, will understand just how remarkable this productivity was. But while remarkable, it was not surprising. Irvin Rock, "Irv" to his friends, spent a lifetime thinking deeply, researching, and writing about the problems of perception. By the time all his work is published, there will be seven books and a very large number of articles.

Honored for his work, Irv was an elected fellow of the Society of Experimental Psychologists and a two-time recipient of the Research Scientist Award from the Public Health Service. In 1986 there was an APA symposium held in his honor, "Computation, Inference and Perception: Theoretical Essays in Honor of Irvin Rock."

In the winter of this year Steve Palmer, a good friend, collaborator, and colleague of Irv's at UC-Berkeley, nominated him for the Howard Crosby Warren Medal of the Society of Experimental Psychology and the Distinguished Scientific Contribution award of the APA. (This was a second nomination.) While unfortunately neither award was bestowed, the letters supporting these nominations were collected and thoughtfully presented to Irv by Steve in April of this year as a way of letting Irv know the extent to which he was cherished and admired by his colleagues. This collection of letters was written by some of the most distinguished scientists working in the fields of perception and cognition today and contains many statements like the following: "One of the great contributors to the study of perception"; "One of America's most creative and productive psychologists"; "A distinguished perceptionist in the classical tradition: an influential theoretician of broad scope and a brilliant experimentalist who has made important contributions to a wide variety of topics"; "His influence on the history of the field of visual perception has been enormous ... Rock is one of the most important figures in perceptual science in this century"; "Rock's work has had a tremendous impact on the field of psychology as a

whole, and perception in particular. Just as the study of perception was dominated in the 19th century by Helmholtz and Hering, the second half of this century was and still is dominated by three major figures: Gregory, Gibson and Rock.... His book, *The Logic of Perception* is destined to become a classic comparable in its impact only to Helmholtz's *Handbook of Physiological Optics*."

Undoubtedly Irv's most widely known work, at least among the general public, is his study with then-student Lloyd Kaufman on the moon illusion. Making the front page of *The New York Times*, that work demonstrated the importance of registered information about distance on the perception of size.

Irv began his career wrestling with the problems of orientation and form, the distinction between the egocentric and environmental orientation of forms, and how these two different aspects of orientation affected our perception of form—a question he addressed with his customary ingenuity and simplicity of method. The problem of orientation was the subject of his doctoral dissertation—completed in 1952 at the New School For Social Research—many research articles, including some published shortly before his death, and his book, *Orientation and Form*, published in 1973 and required reading for anyone interested in the subject.

Over the years he was able to demonstrate that it was the environmental or phenomenal orientation of a form which was the most important in its perception. This ultimately led him to an account of form perception described in *The Logic of Perception*. His interest in the problem of form perception is also evident in his work on anorthoscopic perception and his work on reversible figures, which laid bare the cognitive component in the process of reversal. In every case, his work altered the way in which we think about form perception.

Irv was interested in and did influential work on almost every classical problem in perception. He had a career-long interest in the problem of perceptual organization and was able to show conclusively that the principles of organization, first described by the Gestalt psychologists, occurred at a much later stage of processing, after perceptual constancy had been achieved. He demonstrated in collaboration with Steve Palmer that grouping based on the similarity of lightness was based on perceived lightness. In addition, in work that he and I recently did together, we found clear evidence that grouping is not perceived in the absence of attention. Like his work on form perception, all of this work has also changed the ways we think about perceptual organization.

One of the questions that concerned Irv throughout his career—whether he was studying perceptual organization or perception of motion, position of size, or form—was the question of the level of processing responsible for particular aspects of perception. In every instance the particular questions he asked concerning level of processing were motivated by the assumptions, made by others, that the processes in question were low level and operated in the retinal input. In every instance, he demonstrated that these processes are post-constancy processes and must be thought about differently.

A series of studies on apparent motion typify the elegance of Rock's work. In this research he showed that the conditions responsible for the perception of apparent motion involve more than

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Synthesizer of Psychodynamic and Social Psychology Nevitt Sanford (1911-1995)

Nevitt Sanford died on July 7, 1995. He was representative of a group of psychologists whose origins are fading from living memory. It is instructive to appreciate that when he was a boy and young man in small-town Southern Virginia, the Civil War was to him what World War II is to us now. Confederate veterans and women widowed by the war were numerous. His interest in authoritarianism, prejudice, social, and cultural conflict had deep personal roots.



Nevitt was much influenced by psychodynamic considerations, but his introduction to the tumultuous inner world of the psyche—a world of ambivalences, victories and defeats, biological urges conflicting with social restraints—came from reading William McDougall (1936). Freud and company came later. McDougall is now but a footnote in the history of psychology, but he exerted considerable influence earlier in this

century.

One of the last survivors of the researchers who contributed to *The Authoritarian Personality* (Adorno, T.W., Frenkel-Brunswick, E., Levinson, D.J., and Sanford, R.N., 1950), Nevitt was also one of the last survivors of the graduate students and young colleagues of Henry Murray at the Harvard Psychological Clinic in the 1930s. These men were most influential in insinuating psychodynamic considerations into academic psychology and empirical research in the 1950s.

Nevitt leaves a legacy of eight books and some 200 monographs, articles, and chapters in books. *The Authoritarian Personality* is undoubtedly the best known of these publications. It inspired a wealth of assessment—positive and negative—and a cornucopia of research activities. A book of comparable significance is *The American College* (1962), less well known to psychologists, among whom education often receives little attention. It has exerted great influence in the world of higher education, however.

An alumnus of the University of Richmond, Nevitt received his master's degree from Columbia University. After Harvard, he was associated with the University of California-Berkeley (both the Department of Psychology and the Institute of Personality Assessment and Research); the Tavistock Institute in London; Vassar College; Stanford University; and the Wright Institute, which he founded, in Berkeley. He was also a Fellow

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stimulation from two different places in space. In earlier work he had demonstrated with another student, Sheldon Ebenholtz, that contrary to what Gestalt psychologists believed, apparent motion did not depend on the stimulation of two different retinal locations, but rather depended on stimulations from two different perceived locations—another instance of his concern with the question of the level of processing. Now he established that in a display in which a light appears in one position, then disappears, and is followed by the appearance of a light in another position—the standard stimulus conditions for apparent motion—apparent motion will not be perceived if the perceptual system can interpret the appearance and disappearance as the consequence of occlusion and disocclusion (i.e., as the consequence of its being covered and uncovered by a moving occluding surface).

This work is part of the evidence Rock cites in support of his theory of perception articulated in *The Logic of Perception*, in which he argues for a cognitive-inferential account of perceiving that has its roots in Helmholtz's theory of unconscious inference. In fact, this research on apparent motion is an example of "the avoidance of coincidence" which Rock considers one of the major rules underlying the perceptual inference. In fact, Rock's discussion of the avoidance of coincidence principle provided us with new ways of looking at various aspects of perception and, perhaps most interestingly, it provided a new way of understanding the principles of grouping. His cognitive-inferential theory of perception is the most articulate and complete version of an indirect theory of perception that we have.

There is much more that could be said, for Irv did important work on many other topics—induced motion, visual capture,

perceptual adaptation to distorting lenses, trial learning—but he is to be celebrated not only for his ground-breaking work in perception but for also being an extraordinary human being. He was a man of rare intellectual modesty, great integrity and great kindness. He was also a loyal and caring friend and a superb and nurturing teacher and colleague—something I know first-hand since I was lucky enough to have been his student and his friend ever since. He produced generation after generation of students and "honorary" students who will testify to how much they learned from him even though they were never actually in his classes.

His formal teaching career began in 1952 at the New School for Social Research where he taught until 1959, followed by a period at Yeshiva University where he taught from 1959 to 1967. At Rutgers, he worked first in the Institute of Cognitive Studies from 1967-1981 and then in the Program in Cognition where he taught until 1987. After retiring from Rutgers he moved on to the University of California-Berkeley where he was an adjunct professor until his death.

I myself would never have become a perception psychologist if I had not, as a result of a happy accident, taken a course with him in perception—a subject in which I had no particular interest at the time. I surely did not foresee that it would change my life as it did. His work changed the entire field. Our loss and the loss to the field of psychology is enormous.

Irv is survived by his wife, Sylvia, who was as loving and nurturing to him as he was to those of us who were fortunate to be his friends; and five children, Peter, Alice, Lisa and David Rock and Rayna Shilling-McCallum.

ARIEN MACK
PROFESSOR OF PSYCHOLOGY
NEW SCHOOL FOR SOCIAL RESEARCH

September 1995

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of the Society for the Psychological Study of Social Issues and the Division of Social and Personality Psychology of the American Psychological Association. He was also influential in the founding of the International Society of Political Psychology, which has established an eponymous award.

Nevitt never lost his fascination with the workings of the unconscious and with the power of infancy and childhood to affect subsequent development. He was not one to permit dogma to come down over the senses like a butterfly net, however. In the 1950s he incorporated object relations theory, a more social perspective than traditional psychoanalysis, into his psychoanalytic perspectives.

After his early baptism in psychodynamic theory, Nevitt became increasingly cognizant of the potential of social forces—class, economic circumstance, culture, language, role, and status—to influence behavior. Nevitt maintained self and society, internal urges and external constraints and shaping, in a perilous but functional equipoise. In the discipline of psychology, marked as it is today by increasing and often dysfunctional specialization, this capacity to entertain paradox—to forestall premature closing of the boundaries of a system—warrants close attention and emulation.

Nevitt leaves seven children and an army of grandchildren and great-grandchildren. He loved to sing, particularly with his family. Many of the songs were quaint folk songs, which had been passed on for generations from the early settlers of Virginia. He was a superb athlete in this youth, having had a

particularly distinguished football career at the University of Richmond. For many years he was a passionate supporter of University of California football, not too rewarding an experience much of the time.

He had a marvelous sense of humor—penetrating, ironic, mordant, sly—often very creative in gaining dominion over a difficult situation. Consider, “Thank you for these units of interaction.” Or his observation of members of an organization who were very skeptical of a study he was carrying out: “They want to find out what we are doing so they can tell us to stop.”

In Nevitt’s pantheon of heroes Thomas Jefferson occupied the place of honor. He was a child of the Enlightenment, committed to an Appollonian order in which reason, intellect, cognition are to fashion a more just society. His thinking and his work, however, were permeated with the awareness that the Age of Reason also produced the Marquis de Sade. Irony, conflict, tragedy, perforce, were part of his Weltanschauung.

Bridging the mind and the heart is a truly Herculean task, but Nevitt did not despair over the duality and permission contained in the psychoanalytic vision. It was a fundamental tenet of his professional life to shed what light he could and to extend a measure of kindness along the way. Through his teaching and his writing Nevitt helped many to see more clearly. He will be remembered as a scholar, as a teacher, as a dispenser of the word he fashioned so diligently. Passionate pursuit of the intellectual life needs witnesses. Nevitt was such a witness.

MERVIN FREEDMAN
APS CHARTER FELLOW, RETIRED

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improve their grades through extra credit may decrease the validity of the estimate.

Conclusion

The use of extra credit as a pedagogical tool is a controversial but common practice. Careful consideration of the points presented above and the guidelines we have suggested should help you to clarify your position on this issue, and to improve both your theoretical basis for and the practical implementation of, extra credit opportunities if you choose to provide them.

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Joseph J. Palladino, professor of psychology at the University of Southern Indiana, is the founder of the Mid-America Undergraduate Psychology Research Conference and the Mid-America Conference for Teachers of Psychology. He is a past President of the APA Division on Teaching. Steve Davis and he have written *Psychology*, an introductory textbook published by Prentice Hall (1995).

G. William Hill, IV, is a professor of psychology at Kennesaw State College. He is active in the APA Division on Teaching of Psychology, currently serving as the chair for its program at the annual APA meeting. He founded the annual Southeastern Conference on the Teaching of Psychology.

John C. Norcross is a professor of psychology at the University of Scranton and a clinical psychologist in part-time practice. His most recent books include the third edition of *Systems of Psychotherapy: A Transrational Analysis* (Brooks/Cole, with James Prochaska), *An Insider's Guide to Graduate Programs in Clinical Psychology* (Guilford, with Mayne and Sayette), and the *Handbook of Psychotherapy Integration* (Basic Books, with Marvin Goldfried).

The Student Notebook

Susan Perry - Editor

APSSC Announces Co-Winners for Outstanding Chapter of the Year

Congratulations to University of Scranton and Central Michigan University

For the first time in the young history of APSSC, two local chapters have been awarded the title of Outstanding Chapter of the Year. The two chapters each have been very active working for APS in the interest of students. The University of Scranton in Pennsylvania, and Central Michigan University are the co-winners of this award.

The winners were determined by the Executive Council of APSSC according to strict criteria that include the type of programs that each has organized and employed in the past year, the amount of student outreach, and fulfillment of the mission of APSSC. The two schools will share the \$250 award that accompanies being named the best chapter of APSSC.

Central Michigan is no stranger to such accolades. For the past two years, CMU has won the chapter award. Over the last year, CMU has continued some of their successful programs from the past and

continued in the winning tradition by incorporating new programs into their chapter organization. At CMU's chapter of APSSC, you will find everything from a pumpkin carving contest that results in an APS Pumpkin, to a mock GRE exam. In addition to these great programs, CMU has also tried to use their chapter of APSSC to synthesize academics and fun. To meet this goal, the CMU invites special colloquia speakers and publishes a professional newsletter throughout the year.

The University of Scranton has also previously held the position of Outstanding Chapter of the Year. In 1991, Scranton was deemed the top chapter in APSSC. To reach this position for 1995, they worked on two major projects:

an outreach program and a psychology conference. The outreach program allowed the APSSC members to share their knowledge of psychology with the surrounding community.

Scranton gave presentations to local students ranging in age from elementary school to high school. These talks

covered many topics including the brain, conditioning and learning, and the paranormal. Another project that the Scranton chapter undertook was preparing and operating a large regional conference. The conference began in 1985 and has been run by the APSSC chapter ever since. The conference allows researchers from 20 institutions in a four-state area to present scientific work through posters, talks, and workshops.

Both universities are to be congratulated for attaining the Chapter Award. APSSC hopes that all local chapters strive to become the Outstanding Chapter of the Year for 1996. Now is the time to begin. Your local chapter should start new and exciting concepts to help the chapter grow and serve the needs of the student affiliates of APS. Use the ideas that both the University of Scranton and Central Michigan University have developed or develop new ideas to reach out to your student members. Then send in your chapter activity report at the end of the school year.

If you would like to receive or give suggestions about programs that might help local chapters, contact Mark Newsom, communication director for APSSC (see address in the officer's box). You can also contact Mark for information on how to become a new local chapter in APSSC.



The winners were determined by the Executive Council of APSSC according to strict criteria that include the type of programs that each has organized and employed in the past year, the amount of student outreach, and fulfillment of the mission of APSSC.

The APS Student Caucus represents all the Society's student affiliates. It is not an honor society. All chapter chairs are additionally recognized as members of the APSSC Advisory Committee. For information on APSSC school chapter applications, contact:

Mark Newsom
1300 Elmwood Ave.
Buffalo, NY 14222
Office: (716) 878-6701
Fax: (716) 878-6600

Chapter founders should provide information on the institution, department, and students, and designate a faculty sponsor.

Send Us an Article About Your Chapter

APSSC's Student Notebook would like to publish an article about your chapter. If you have exciting activities or ideas, write it up and send to Susan Perry, Student Notebook editor. We are open to any articles that might help local chapters or student affiliates in general. Please limit articles to 250 to 300 words. We hope to see your ideas published in the Student Notebook soon!

Help Your Colleagues And Help Yourself

Get involved in the APSSC Mentorship Program

All APS members and affiliates are encouraged to become involved in the APSSC Mentorship Program. We desperately need mentors to help foster the growth of our many eager students. Anyone who has the time to be a mentor is encouraged to become involved. Mentors provide assistance in the form of writing and reviewing manuscripts, research, clinical practice, and many other areas. Senior- or junior-level faculty members and graduate students may all serve as mentors for undergraduates, graduate students, and junior faculty. The program provides an exciting new way to supplement resources, make important peer connections through networking, and provide information within a broader spectrum. The major goals of the Mentorship Program are: to help the professional growth of junior faculty, graduate students, and undergraduate students; to facilitate communication between senior faculty and current and future colleagues; and to promote the continued quality growth of APS. The program is not meant to replace standard support systems. It is, however, meant to support and further your educational experience.

Mentorship Registration Form:

Last Name		First Name	MI	Institution	
Address			City	State	Zip Code
Email Address			Phone Number		
Your current position:			How would you like to provide/receive mentorship assistance: <i>(Check up to three)</i>		
<input type="checkbox"/> Senior Faculty/Researcher			<input type="checkbox"/> Academic Administration		
<input type="checkbox"/> Junior Faculty/Researcher			<input type="checkbox"/> Journal Editing		
<input type="checkbox"/> Graduate Student			<input type="checkbox"/> Research		
<input type="checkbox"/> Undergraduate Student			<input type="checkbox"/> Applied Psychology		
<input type="checkbox"/> Other (Please Explain)			<input type="checkbox"/> Manuscript Review		
Your General Area of Interest: <i>(Check one)</i>			<input type="checkbox"/> Grants		
<input type="checkbox"/> Biological/Physiological			<input type="checkbox"/> Clinical Practice		
<input type="checkbox"/> Clinical			<input type="checkbox"/> Writing Manuscripts		
<input type="checkbox"/> Counseling			<input type="checkbox"/> Teaching		
<input type="checkbox"/> School			<input type="checkbox"/> Ethics and Review		
<input type="checkbox"/> Cognitive			<input type="checkbox"/> Other (Specify) _____		
<input type="checkbox"/> Developmental			How would you like to be involved in the Mentorship Program:		
<input type="checkbox"/> Education			<input type="checkbox"/> I am applying as a mentee.		
<input type="checkbox"/> Experimental			<input type="checkbox"/> I am applying as a mentor.		
<input type="checkbox"/> General			<input type="checkbox"/> If you are applying as a mentor, list the maximum number of mentees you could accept.		
<input type="checkbox"/> Industrial/Organizational					
<input type="checkbox"/> Personality/Social					
<input type="checkbox"/> Quantitative					

Return completed form to:

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Tel: (817) 921-7414, Fax: (817) 921-7110, E-mail: N.SCARBERRY@TCU.EDU

APSSC Officers ♦ 1995-1996

All of the members of the Executive Council welcome students and others who wish to contact them about concerns particular to their own offices.

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CONTINUED ON NEXT PAGE

Meet Your 1995-1996 APSSC Executive Council

Introductions to the APSSC Council continued from last month's Student Notebook

Communications Director **Mark Newsom**

Mark is a graduate student in psychology at SUNY-Buffalo. His research interests include the development of AIDS-preventive psychosocial interventions, efficacy of psychotherapeutic interventions for depression, and existential psychology. He became involved in the APS Student Caucus at the 7th Annual Convention, where he presented a poster. Resulting from literature he read on the APSSC, he attended the business meeting, where he was nominated and elected to his current position.

As communications director, Mark will continue and expand upon the work that Matt Monte did last year. He believes that increasing the number of APS student chapters should be of primary importance. He also hopes to see the continued maturation of the APSSC small grant competition, which provides valuable experience for students who wish to establish a career in research.

Volunteer Coordinator **Nikki Scarberry**

Nikki is in her second year at Texas Christian University in the general experimental program. She is concentrating her studies in social psychology and is actively investigating the different aspects of the attitude-behavior relationship. Her research focus has concerned the effect of stereotypical information on attitudes and behaviors.

Nikki has been involved in the Student Caucus for six months as the Mentorship Program Committee chair. She says getting students involved in APS is crucial for their future professional development. Nikki's goals for the organization are to build relationships between the many student affiliates and strengthen the relationship between them and APS.

Student Notebook Editor **Susan Perry**

Susan is starting her second year of graduate study at Kent State University in experimental psychology. Her research interests include auditory perception and music cognition, and she is currently working on developing a 3-dimensional model of tonal perception. She is a newcomer to involvement in the APSSC at the national level, but she has presented posters at the past two APS conventions and previously served as president of her undergraduate APS chapter.

She would like to use the Student Notebook to increase student involvement and emphasize the opportunity provided by the APSSC to interact with fellow psychology students and promote original scientific research.

Past President **Stephen Fiore**

Stephen is starting his fourth year of graduate study at the University of Pittsburgh, Learning and Research Development Center. His research focus is non-verbal cognition and creative problem solving. He is currently writing a chapter for an edited volume on right hemisphere language processes.

As president of the APSSC, Stephen had three main goals: 1) to increase the professional development of our members, 2) to increase the efficiency with which the Caucus is run, and 3) to better market the programs and services of the Caucus. He feels that the 1994-1995 Executive Council made a great deal of headway in meeting these goals and that the experience of working with such a stellar group was quite rewarding. ♦

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they all relate directly to human behavior.

The striking fact about health is that more than half of all deaths in the United States are due to harmful behaviors; indeed, something like nine out of the 10 leading causes of death are behavioral in nature, ranging from smoking to AIDS.

The NAS does not make distinctions between sciences in terms of importance. All aspects of science are viewed as important. The Commission on Behavioral and Social Sciences and Education (CBASSE) is an extremely active and effective presence with the National Research Council, the action agency for the National Academy of Science and Engineering and the Institute of Medicine.

The striking fact about health is that more than half of all deaths in the United States are due to harmful behaviors...

RICHARD THOMPSON
PRESIDENT
APS

Following are a few recent examples of studies completed by committees of CBASSE and published as books: *Evaluating AIDS Prevention Programs* (1991); *Behavioral Measures of Neurotoxicity* (1990); *Learning, Remembering, Believing: Enhancing Human Performance* (1994); *Demography of Aging* (1994); *Understanding and Preventing Violence* (1993); and *Virtual Reality* (1995).

These and many other volumes of studies by CBASSE can be obtained from the National Academy Press, 2101 Constitution Ave., NW, Washington, DC 20418.

Through agencies like CBASSE, the NRC, and the NAS, psychology has a strong and highly respected presence at the national level.

Following is Albert's statement:

CONTINUED ON NEXT PAGE

The Importance of Social and Behavioral Sciences To the Nation's Well-Being

**A Statement by Bruce Alberts
President
National Academy of Sciences**

The National Academy of Sciences strongly affirms that the social and behavioral sciences are important disciplines in which independent scholarship and basic research have made significant contributions to mankind's store of knowledge and to the ability to meet critical societal challenges. The Academy recognizes the most distinguished scientists in the United States; its active membership of 1,728 includes 63 anthropologists, 69 psychologists, 51 social and political scientists, and 47 economists.

Rapid advances in the social and behavioral sciences are improving our ability to address key national problems, including:

- ◆ the type of education needed to produce a workforce that can compete successfully in a world market, including the impact of new technologies on the nature of work;
- ◆ the search to improve the nation's health, recognizing that half of all deaths are caused by harmful behaviors (e.g., smoking, alcohol and drug abuse, inappropriate diet and lack of exercise);
- ◆ the imperative to reduce crime and violence, understanding that community disorganization may be as important a risk factor as poverty and low income;
- ◆ the pressures posed by increasing world population, considering the dynamics of human fertility.

The National Institutes of Health and the National Science Foundation, through competitively awarded research grants, provide financial support for the generation of the basic scientific knowledge needed to devise solutions to these and other pressing problems. These programs are particularly valuable for the quality of the science they produce. Moreover, efficient and effective delivery of public services is enhanced by this research, which can reasonably be viewed as a critical component in the drive to make government work better.

It is important to note that industry is quite unlikely to undertake research of this type; only the Federal government has the incentive to make the investment on behalf of the nation.

The work of the National Research Council has repeatedly demonstrated the value of the insights that build on fundamental research in the social and behavioral sciences:

- ◆ The Research Council is just completing the national science education standards, which is the result of an intensive three-year, grassroots effort that has involved many thousands of individuals of diverse expertise. Central to the recommendations in these standards are methods of instruction that take advantage of new findings that are based on recent educational research.
- ◆ A recent Research Council report showed that the U.S. trade deficit might only be half that of conventional estimates. Recognizing increasing international integration, new estimates can be constructed that consider U.S. international economic activities by national ownership (i.e., U.S.- versus foreign-owned). Because the U.S. balance-of-payments is taken as a key indicator of the nation's competitiveness, understanding what activity it actually measures is vital to drawing the appropriate conclusions about the nation's economic health.
- ◆ Several Research Council and Institute of Medicine studies have reviewed research on what is required to change specific types of unhealthy behavior such as sharing needles among intravenous drug users, obtaining adequate prenatal care, and improving diet.
- ◆ Our recent studies suggest that specific indicators of community disorganization, such as housing density and percentage of single-parent families, can explain more about violence than traditional measures of poverty and income inequality.
- ◆ The Research Council has considered how to ensure high-level performance in work crews that must shift rapidly from routine to high-stress operations, such as air line crews, combat units, and emergency medical teams. The findings centered on ways to improve the groups' ability to make the transition to crisis modes of operation.

June 26, 1995

Organizational Profile

The Society for the Psychological Study of Social Issues

Origins and Purpose

The Society for the Psychological Study of Social Issues (SPSSI) is an organization of over 3,000 psychologists and allied social scientists who share a common interest in research on the psychological aspects of important social issues. For 59 years, members from various academic disciplines have been involved in research on issues involving poverty, ethnic/race relations, conflict resolution, and prevention/intervention to promote human welfare. Their disciplines include, but are not limited to, sociology, anthropology, public health, and linguistics. In addition to being multi-disciplinary, the Society's membership is also international, with members as nearby as Canada and as far away as Africa.

Membership

Annual membership dues range from \$12 to \$75, depending on one's income. Trial membership is available for one year for \$12 (\$10 for students). Membership includes a subscription to the *Journal of Social Issues*, which is published quarterly, and the *SPSSI Newsletter*. Membership in the Society is not limited to members of the American Psychological Association. More details about SPSSI, as well as a membership application, are available on the World Wide Web at: <http://www.apa.org/division.html>.

The "Organizational Profile," a regular feature of the *APS Observer*, informs the research community about organizations devoted to serving psychological scientists and academics. It is difficult for anyone to keep abreast of the various organizations of potential personal interest. This section should help in that task. The Editor welcomes your suggestions as to organizations warranting coverage.

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BACKGROUND

As an organization of social scientists, SPSSI is an independent society. It is also Division 9 of the American Psychological Association, and since 1989, an Organizational Affiliate of the American Psychological Society. The Society has consultative status with the Economic and Social Council of the United Nations.

The purposes of the Society are to bring theory and practice into focus on human problems of the group, the community, and the nation, as well as the increasingly important problems that have no national boundaries. SPSSI constitutes a dedicated group of psychologists and social scientists who implement principles of concern for human rights and liberties in living, working and political situations.

SPSSI affords social and behavioral scientists means of applying their knowledge and insights to the critical problems of today's world through the publication of the *Journal of Social Issues* (Daniel Perlman, editor; Phyllis Katz, incoming editor), the *Social Psychological Applications to Social Issues* series, a variety of SPSSI-sponsored books, the *SPSSI Newsletter*, and through an annual convention.

Research on social issues is fostered through several annual awards and a Grants-in-Aid Program available for research projects. SPSSI's Public Policy Fellow is located in Washington, DC, and works to integrate SPSSI policy initiatives into the public policy of the U.S. government. SPSSI is governed by Kurt Lewin's dictum that close cooperation between theoretical and applied psychology "can be accomplished. . . if the theorist does not look toward applied problems with highbrow aversion or with a fear of social problems, and if the applied psychologist realizes that there is nothing so practical as a good theory."

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