

BEHAVIOR

Educating for careers

Almost 90 percent of all jobs require less than a four-year college degree, but for years society has focused on a college education as the key to success in the working world. Thus, many students may be in for a shock when they set out to face the workaday world. According to results of the National Assessment of Educational Progress, 44 percent of 17-year-olds desire a professional career but less than 25 percent of the currently existing jobs are professional or managerial. These findings are part of a career and occupational development survey of 100,000 respondents in four age groups—9-year-olds, 13-year-olds, 17-year-olds and young adults aged 25 to 36. Not only are many students overly optimistic about their career aspirations, many are ill prepared for the jobs that are available. One-third of the adults and more than half of the 17-year-olds had difficulty writing a job application and figuring a finance charge. Less than half the 17-year-olds had taken an aptitude test and only 16 percent had discussed the results with a counselor. Only 54 percent of the 17-year-olds could correctly answer five questions about the amount of training needed for a specific, commonplace job. And as would be expected, females are in even more of a bind than males. Only 3 percent of the 17-year-old girls selected housewife as their first career choice, but 37 percent of the young adult women identified themselves as housewives.

Psychology, women and work

A longer life span and overpopulation are making it increasingly necessary for women to have sources other than marriage and children for feelings of self-worth, achievement and satisfaction. The most likely alternative is work, but the self-perceptions of many young girls and women are not consistent with the pursuit of career-related success. Some even prefer to believe they lack desirable qualities rather than risk attributing "masculine" traits to themselves. Grace K. Baruch of the Worcester Foundation for Experimental Biology has examined the self-perceptions of white, middle-class girls and their mothers in an attempt to determine which factors foster competence-related traits in girls and what kinds of maternal influences are associated with a daughter's perception of herself as competent.

In the Fall issue of *PSYCHOLOGY OF WOMEN* (a new quarterly publication of the American Psychological Association) Baruch reports that high-competence girls had high career aspirations and desired fewer children. Almost 20 percent of the girls surveyed aspired to high-level careers (mostly physicians and scientists). About half chose to be either a teacher, nurse or secretary. Those who had high self-perceptions of competence had mothers whose own self-perceptions were high and placed significantly more value on traits related to independence, assertiveness and achievement.

* * * * *

What are the personality characteristics of women who make it as professionals in our society? Louise M. Bachtold of the University of California at Davis reports in *PSYCHOLOGY OF WOMEN* on a study of 863 women psychologists, scientists, artists, writers and politicians. Politicians were more sociable, conscientious, self-controlled and group-dependent. Artists and writers were more affected by their feelings, spontaneous and natural and inclined to follow their own urges. Scientists were more reserved, serious and tough-minded. Psychologists were more flexible, liberal and accepting. When compared with women in the general population, career women were all found to be brighter, more assertive, more adventurous and less conservative.

ZOOLOGY

From our reporter at the meeting of the Society for Neuroscience in Toronto

Sounds of silence

Sixty milliseconds of silence has a lot in common with certain consonant sounds, researchers of speech perception find.

Alvin Liberman, Michael Dorman, Lawrence Raphael and Bruno Repp of the Haskins Laboratory in New Haven inserted a pause between an "s" sound and the syllable "lit," for example, and listeners reported hearing the word "split."

Liberman explains that the listener interprets the silence as a stopped consonant because there is naturally a pause when a person closes his vocal tract to make the consonant sound.

The researchers further illustrated this idea by removing a silence normally in human language. They recorded a single voice saying "eb" and then "de." When the syllables were played back without a pause, listeners heard only "edde." There was not enough silence for a vocal tract to have closed to produce a "b" sound. But when each syllable was recorded by a different speaker, listeners heard "ebde," no matter how closely spaced the syllables.

"It's as if the speech-perceiving mechanism knew about human vocal tracts," Liberman concludes. "The key to speech grammar may be in the manner of speech production."

New neurochemical communication

Cells in the central nervous system may communicate via a public address system, as well as by the well-characterized private conversations between neurons. Jeffery L. Barker and T. G. Smith, Jr. at the National Institutes of Health and Earl Mayeri at the University of California Medical Center, San Francisco, have discovered that chemicals released by nerve cells in the snail brain travel some distance to cause long-lasting changes in the excitability of other nerve cells.

These long-range messengers are peptide chains. Both the natural snail substance, which has not been completely characterized, and vertebrate hormones oxytocin and vasopressin increase the excitability of specific snail brain cells and also initiate oscillations of membrane potential. A minute of exposure to peptides can produce hours of this pacemaker activity.

According to Barker, these "neurohormones" may regulate complex programs of nervous activity to produce an instinctual behavior important to survival.

Brain differences in obese rodents

Differences in brain chemicals have been demonstrated between normal rodents and those with an inherited tendency to overeat. The studies implicate specific groups of nerve cells in regulating appetite and body weight.

In two brain areas, researchers found 25 percent more norepinephrine in overweight rats than in lean littermates. Norepinephrine is one of the chemical transmitters that carries signals between nerve cells. Even restricting the diet of mice with the genetic tendency to overeat did not change the high levels of transmitter, report Joan Lorden of the University of Alabama and Gary Oltmans of the Chicago Medical School.

Experiments on rats by Judith Cruce of Johns Hopkins University and David Jacobowitz of the National Institutes of Health concurred that norepinephrine levels of specific brain regions were altered in genetically obese animals.

"Now we need to work out whether these differences in transmitter levels are functionally significant and whether they can be altered and corrected," Oltmans says.