
Technology

Decade of the robot

Just as the last decade has seen rapid sophistication of the electronic computer and its application to daily tasks down to the level of children's homework, the decade of the 1980's promises to see similar advances and applications of robots, according to a report in DIMENSIONS, the technical news bulletin of the National Bureau of Standards.

As things stand now, about 1,500 to 2,000 robots are already in worldwide use today, performing such simple tasks as loading materials into processing machines and spot welding metal plates. A few advanced robots contain memories capable of directing several separate operations, as welding different models on an auto assembly line.

By the 1980's, however, robots will be equipped with sensors and complex memories that will allow them to interpret and carry out "task-oriented commands" involving several discrete operations in varying environments. Such robots would be capable, for example, of working on offshore oil wells at depths too great for divers or performing mining and tunneling operations that now endanger human workers.

The article concludes that "there seems to be no major technical barriers to achieving highly automatic, self-reproducing robot factories in the 1980's" and that already strong economic forces are pushing for the introduction of robots to increase productivity and reduce costs in many industries. Several problems, of course, remain: What happens to the people thrown out of work and who will control "the powerful economic and political forces [robots] will represent?"

About those magnetic stripes

Holders of the nation's 275 million credit cards may have noticed the appearance in the last couple of years of a quarter-inch wide magnetic stripe on the backs of their cards. This simple addition represents a developing revolution in the whole credit card business, explained in the December IEEE SPECTRUM.

The new magnetic-stripe credit cards (MSCC) are designed to allow automation of the time-consuming authorization process that protects both customer and companies from fraud. Whereas a store clerk must now phone a toll-free number and ask a company authorizer to look up the customer's number to see if his credit is still good, insertion of the new cards into the store's computer terminal will automatically allow authorization and updating of the customer's file.

Physically, the stripe contains two separate messages. The bottom half contains the cardholder's identification number—sufficient for most transactions. The top half will be used mostly by airlines who insist on having the holder's name encoded on the stripe. Companies are considering adding a third track on a separate stripe to contain information, such as bank balance, that would be changed with each transaction.

While providing more security and convenience than physical embossing of letters and numbers, the magnetic stripes are not without their drawbacks. The information content of a stripe can be transferred from one card to another or modified completely, given know-how and equipment. Also the information may be destroyed by encounter with a large magnetic field, like those around welding machines or electric traction motors. Card companies are thus looking for even more sophisticated technology—such as holograms—for future use.

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Behavior

Color them yellow

Novelists and interior decorators have known for a long time that colors connote certain sensations and moods. But the associations of moods with certain colors have been only occasionally confirmed by scientists. Peter O. Peretti of Kennedy-King College in Chicago decided to conduct a study to see whether color-mood associations exist in college students. They do, he reports in PERCEPTUAL AND MOTOR SKILLS (Vol. 39, No. 2).

Peretti studied 200 psychology students and 200 English students. The students were asked to read passages from Shakespeare's tragedy *Hamlet* or from Shakespeare's comedy *As You Like It*, then to record whether blue, yellow or gray reflected their moods. Peretti anticipated that yellow would reflect a happy mood, blue a sad mood and gray a neutral mood.

Both males and females in both psychology and English recorded blue most often while reading the tragedy, as expected, and recorded yellow most often while reading the comedy, as expected. But what was not expected was that males from both academic disciplines selected yellow more often than might be expected while reading the tragedy. And females from both disciplines selected blue more often than might be expected while reading the tragedy.

Children's views toward illness

Past studies have suggested that hospitalized children believe that their illnesses are a punishment for some misbehavior on their part. Why might this be? The only way to find out, Barbara Brodie of the University of Virginia reasoned, was to study what healthy children think about illness when they are not subjected to it.

Brodie studied 408 healthy school-age children. The children responded to questionnaires on illness. Most of the children did not perceive illness as a punishment for misbehavior. These results, Brodie reports in the December AMERICAN JOURNAL OF PUBLIC HEALTH, clearly suggest that most healthy children do not view illness as do ill hospitalized children. The disparity of views toward illness might best be explained by the phenomenon of illness itself, rather than by anticipation or even the memory of previous illness. In other words, when a child is enjoying health, his outlook is different from that when he is seriously ill.

Cancer and your life-style

As if cancer hasn't been implicated enough with viruses, genetics, pollutants, breakdowns in immune defenses and a host of other factors, it is now being correlated with family size and social class.

Nancy Gutensohn and her team at the Harvard School of Public Health looked for a relationship between Hodgkin's disease (cancer of lymph tissues), tonsillectomy and family size. As they report in the Jan. 2 NEW ENGLAND JOURNAL OF MEDICINE, the relation between tonsillectomy and Hodgkin's either is noncausal or is complex and modified by family size. Risk of Hodgkin's was found to increase as sibling number decreased, suggesting that Hodgkin's is concentrated in small families.

The increased risk of Hodgkin's among persons from small families, the investigators conclude, may reflect an increased risk in upper social strata. Or some aspect of the life-style of small families may make them especially susceptible to Hodgkin's.

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