

YORK JUNKS

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The Billings Gazette

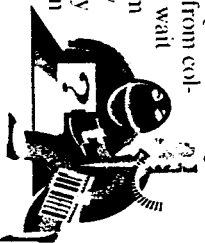


**Digital
Corner**
Tom Nelson
Gazette Computing
Page Editor

Job hunters now have the upper hand

A few years ago, hardly a week went by when you didn't read about massive layoffs in America. Times are better now, and that means job-hunters have some leverage.

That's good news for me. I have two daughters homing in on graduation from college. I can't wait to hear them tell me they are gainfully employed in a job they adore.



If you know of somebody who needs a job or who might want to improve his or her employment situation, tell that person about "The EmploymentSpot" at <http://www.employmentspot.com>

brain power

Electronics that help impaired people 'will' computers to work may soon be able to help people walk

By WARREN KING
The Seattle Times

SEATTLE — Scientists have developed an electronic device that when implanted in the brain allows severely impaired patients to "will" a computer to speak for them. It may someday help them move limbs and other body parts.

Called a neurotrophic electrode, the device harnesses brain cells' electric impulses to move a computer cursor, which in turn activates spoken words or phrases.

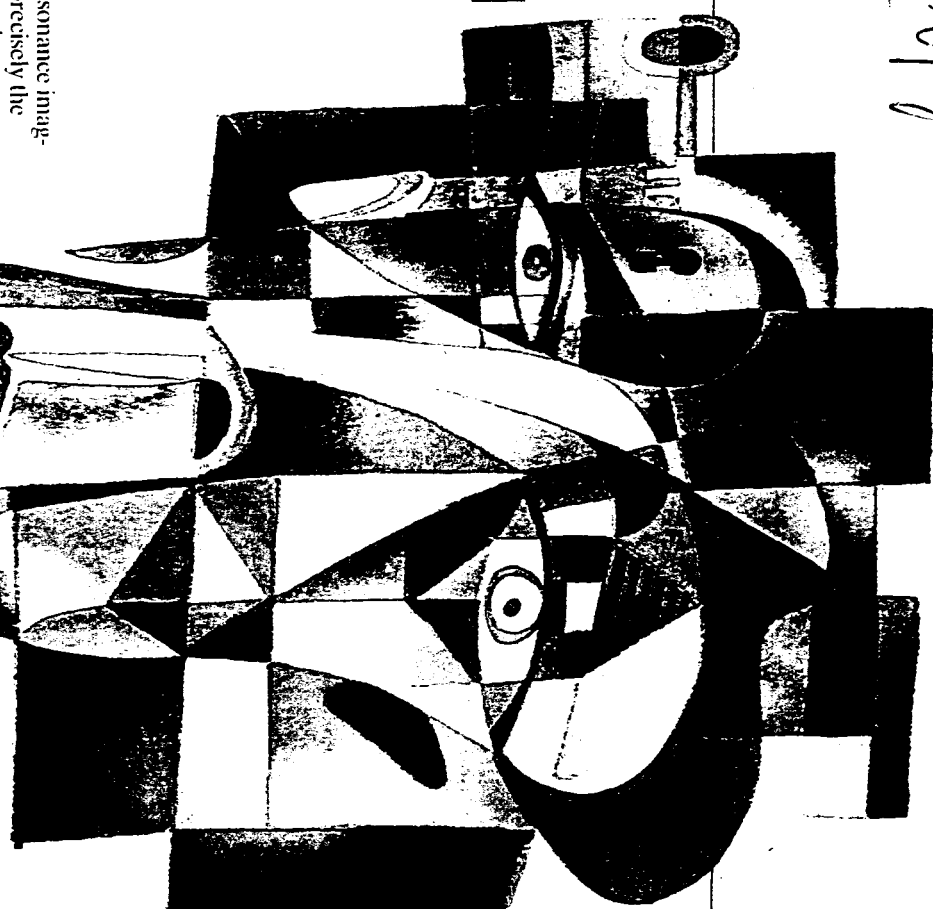
"This is right on the cutting edge. It's 'Star Wars' stuff. ... We see it as replacement therapy for whatever has caused a (physical) loss," said Emory University scientist Roy Bakay, who was presenting his

through magnetic-resonance imaging (MRI) to learn precisely the areas that control muscle movements. When the patient thinks about moving an arm or hand, for example, the MRI shows the increased activity in certain areas: blood flow increases and the brain cells "fire," or conduct impulses.

The key device in the system is the neurotrophic electrode, a glass cone about the size of a ballpoint pen tip that is implanted through the skull and into the cortex just above the ear. Two electrodes are implanted to facilitate vertical and horizontal movements of the cursor.

The cone contains a gold wire and nerve tissue from the leg. Nerve cells inside the cone stimulate cells of the cortex to grow into the device

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<http://www.employmentpost.com>
 "Those looking for the fastest-growing fields of employment will find educational requirements and potential earnings for the following:

- Home health aides.
- Computer scientists.
- Paralegals.
- Corrections officers.
- Actuaries.
- Physical therapists.
- Physician assistants.

If you know you are qualified but don't know how to handle the inevitable interview, you are in luck. This site provides tips on how to dress, answer tough questions, ask questions of your own, write resumes, write cover letters and much more.

When you get that interview for the perfect job, I hope you don't get this real-life question **related at the site:** "Why like to see an frog as a fruit basket?" Another member completed an online one another. Which piece of fruit will you be in this basket?"

To fire or not to fire?

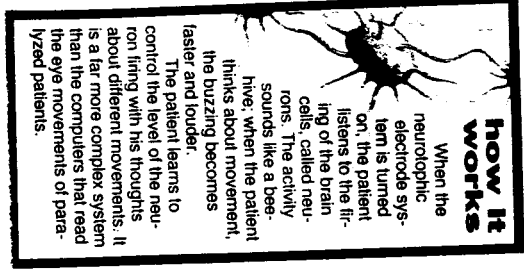
One of the toughest management tasks is firing an employee. The first step is making the decision. If you are undecided, the "Keep or fire" questionnaire at <http://innocuous.com> might help you make the right decision. Click on "Interactive Quiz" on the right side of The Business Resource Center's home page.

If the test comes out in favor of firing, you are advised to read about wrongful discharge and how to protect yourself from the legal damage it may cause.

I took the test, evaluating myself as I were my boss. I most modestly say to those who have the power to fire me that, as the evaluation says: "Keep an eye on this person. Someone will try to lure him or her away from you." In all seriousness, employees who would like an employer's view of

research Wednesday to the Congress of Neurological Surgeons. More than 2,000 neurosurgeons are attending the meeting in Seattle this week.

Bakay, vice chairman of the neurosurgery department at Emory University, said the technology, called cognitive engineering, could someday be used to help paralyzed patients move limbs or press the devices. For now, it is being tested in patients with the most severe impairments, including the inability to speak and move their eyes.



More than 20 major Americans a year suffer strokes and the tens of thousands more are impaired from spinal-cord injuries and illnesses such as Lou Gehrig's disease. Most can think quite clearly, but many are severely hampered by their inability to communicate adequately.

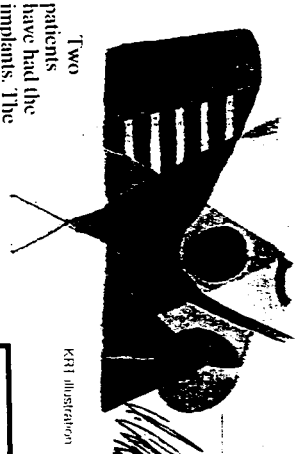
Bakay and his Emory colleague, Philip Kennedy, conducted extensive research on monkeys before their first human experiments. The system they devised uses a combination of the brain's most basic functions and space-age electronics. Before the device is implanted, physicians first examine the brain

the impulses the cells. "It produces a little brain inside the electrode," Bakay said.

Once the implant is made, the skull is closed and no wires go through it. A receiver and amplifier for each implant sit in slight indentations in the top of the skull. A signal processor filters the correct signals for the patient to move the cursor. The system is powered by a baseball-cap-sized, removable induction coil called a "smart cap" that sits on top of the head.

The Emory University scientists and patients have learned through trial and error how to tailor thoughts of movement for each patient. For example, thinking about moving the hand and foot may make the cursor move up and down for one patient.

"At first it was difficult to stop the cursor on the speech icon, so we had to reprogram the system," said Bakay, who has been working on the project for more than eight years. Pointing to different icons produce phrases such as "I am thirsty" and "turn the light on" and "see you later. Nice talking to you."



Emory University

Two patients have had the implants. The first was a 52-year-old woman who eventually died of Lou Gehrig's disease (amyotrophic lateral sclerosis). "She really wanted to do this and we learned a lot about the basic principles of this from her," Bakay said.

Bakay said the research was so futuristic that he couldn't secure the usual government funding at first; he got money instead from Emory University and the Department of Veterans Affairs. After he and his colleagues proved the system viable, he received a research grant from the National Institutes of Health for research with three more patients.

Cognitive engineering has potential for helping many different kinds of patients, Bakay said. These include trauma victims who have lost limbs and cancer patients who have lost their voices. As the technology improves, controlling movement or speaking will become more and more automatic for patients, he said. "We hope that it can really improve people's lives," Bakay said.

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