

point to David Packard as the first to show the way toward a more rational acquisition system.

Mr. President, I am grateful that I was able to work with David Packard over the last decade on several important issues. He was at an age when most people stop work and take up retirement. But not David Packard. He would answer the call of public service whenever it sounded. He suffered from a bad back, and taking transcontinental plane flights forced him to endure real pain to serve his country, but serve he did.

David Packard always was focused on the art of the possible. He knew that change was incremental and he would take what progress he could make today to build for another day. I first met him in 1985. He came to me, a Democrat then in the minority here in the Senate, because I had indicated an interest in a report he had written in 1983 for the White House Science Council. Its topic was how to improve the Federal Government-operated research laboratories. He had called for significant changes in personnel policy, in acquisition of laboratory equipment, and in improving laboratory infrastructure.

The most important change he and his panel had advocated was to allow all the laboratories to go to a more flexible personnel system along the lines of the system then in place at the Naval Weapons Center at China Lake, CA. Mr. Packard had been frustrated by the slow pace of the Reagan administration in considering his panel's proposals. He wanted to jumpstart congressional consideration with my help and that of then Congressman Don Fuqua, another Democrat.

Unfortunately, all we were able to win in the short run was the adoption of a flexible personnel system at the National Bureau of Standards, now the National Institute of Standards and Technology. As predicted, that personnel system has worked very well and helped NIST maintain its leadership in a broad range of technologies. As usual, David Packard was ahead of his time. What he recommended more than a decade ago on lab personnel reform is now part of the effort to reinvent the Pentagon's laboratories.

Mr. President, I will miss David Packard's wisdom and guidance, and so will many of my colleagues on both sides of the aisle. There's a passage from T. E. Lawrence's book *Seven Pillars of Wisdom*, which reads:

All men dream, but not equally. Some dream by night in the dusty recesses of their minds, and wake in the day to find it is vanity. But the dreamers of the day are dangerous men. For they act their dream with open eyes to make it possible.

David Packard was a dreamer of the day who deserves to be remembered by a grateful Nation for the dreams he made possible. I am glad to have known him.●

SAGINAW HIGH SCHOOL TROJANS

● Mr. LEVIN. Mr. President, I rise today to honor the Saginaw High

School boys basketball team. On Saturday, March 23, 1996, the Trojans from Saginaw, MI, won the Michigan Class A State basketball championship over Southfield Lathrup by a score of 67 to 60. The game took place in front of 11,000 raucous fans at Michigan State University's Breslin Center.

The Trojans showed great character in their journey to the State championship. In their semifinal game, the Trojans rebounded from a 19-point deficit to win and move on to the championship. Once again in the championship game, the Trojans had to come back from a large deficit to win—this time they were behind by 12 points.

In the championship game, the Trojans succeeded against great odds. The story of David and Goliath comes to mind when envisioning the game between Saginaw and Southfield Lathrup. Saginaw High faced a team with a considerable size advantage, but the Trojans were not intimidated and continued to play the way they had all season long, stressing teamwork and defense. The Trojans caused 21 turnovers, scoring 22 points off those turnovers.

The Trojans' hard work and determination which marked their championship victory is nothing new to those familiar with the team. The Trojans' coach, Marshall Thomas, said after the game, "No other team will outwork us." The Trojans have surely shown us how hard they will work and what heart they have in coming back from two large deficits to win the Michigan State championship.

But it wasn't just the team who showed great heart in winning the State championship, as the players and coaches are quick to point out. Support from the students, faculty and community was vital for the Trojans to overcome such long odds. Trojans' fans traveled all over the State to cheer their team on to victory. The fans continued to give their team strong support regardless of the score of the game.

I know that my Senate colleagues join me in congratulating Saginaw High School on winning the Michigan Class A State basketball championship.●

THE DEATH OF HUNG WO CHING

● Mr. AKAKA. Mr. President, I rise to pay tribute to a very dear friend and pioneer Hawaii businessman, Hung Wo Ching, Aloha Airgroup vice chairman, who died on March 26, 1996, in Honolulu. Since 1958, Mr. Ching served on the interisland carrier's board of directors and held a number of executive positions with the company. Under his leadership, Aloha Airlines Inc. grew from an upstart airline to become the dominant interisland carrier in the State of Hawaii.

Hung Wo Ching was raised in Hawaii by immigrant parents from Canton, China. He graduated from Honolulu's McKinley High School in 1931 and at-

tended the University of Hawaii. Following his freshman year, he studied liberal arts at Yenchen University in Beijing, China.

In 1935, he returned to the United States and completed his undergraduate education at Utah State University, where he earned a bachelor's degree in agricultural economics. In 1945, he received his doctorate in agricultural economics from Cornell University. When he was 41 years old, he attended Harvard University as a visiting scholar.

In 1945, Mr. Ching traveled to Tientsin, China to start a sugarbeet industry. The outbreak of civil war in China 2 years later put an end to those dreams, and he returned to Hawaii to concentrate on his real estate investments. Shortly after his return to Hawaii, the founder of Trans Pacific Airlines encouraged him to invest in his upstart airline.

In addition to being on Aloha's board of directors, Mr. Ching was also a director for Bishop Insurance of Hawaii, Inc., and the chairman of the board of directors of Diamond Head Memorial Park and Nuuanu Memorial Park. He was an honorary trustee of the U.S. Committee for Economic Development and the Bishop Museum, and a member of the advisory councils of Cornell University and Utah State University. He was a member of the Judicial Council of the Supreme Court of Hawaii, the Hawaiian Civic Club, and the advisory board of Liliuokalani Trust.

Over the years, Mr. Ching has held trusteeships and directorships with many Hawaii companies and charitable foundations, including Bishop Estate, Bank of Hawaii, Alexander and Baldwin, Matson Navigation Co., Hawaiian Telephone, Hawaiian Life Insurance Co., Ltd., Hawaiian Western Steel, Ltd., and Hauoli Sales, Ltd.

Mr. President, I ask my colleagues in the Senate to join me in paying tribute to the memory of Hung Wo Ching, and pass along our deepest sympathies to his wife, Elizabeth, and his children and grandchildren.●

THE LEARNING WINDOW

● Mr. CONRAD. Mr. President, Newsweek magazine on February 19, 1996, published an article regarding research that is underway by several pediatric neurobiologists in the United States on the development of a child's brain. The research examined the significance of early childhood experiences, particularly for children ages 0-3, on the development of the brain.

According to researchers, "it's the experiences of early childhood, determining which neurons are used, that wire the circuit of the brain as surely as a programmer at a keyboard reconfigures the circuits in a computer. Which keys that are typed—which experiences a child has—determines whether the child grows up to be

intelligent or dull, fearful or self-assured, articulate or tongue-tied." According to the researchers, almost anything is possible provided children are exposed to the right experiences at an early age. As one researcher, Harry Chugani of Wayne State University remarked, "early experiences are powerful, they can completely change the way a person turns out."

Mr. President, the findings of these neurobiologists support a much closer examination by Congress of whether we are providing sufficient support at the Federal level for Head Start programs, and especially the Zero-to-Three initiative for infants and toddlers. As my colleagues may recall, during consideration of Head Start reauthorization in 1994, authority for a new infant and toddler initiative was adopted as part of the reauthorization of Head Start programs. Under the reauthorization, 3 percent of total appropriations for fiscal year 1995—\$3.5 billion—was set aside for Zero-to-Three programs.

Currently, funding for the Zero-to-Three initiative totals \$106 million. By 1998, the level of funding for the Zero-to-Three initiative will increase to 5 percent of total appropriations. President Clinton has requested \$3.9 billion for Head Start in his fiscal year 1997 budget. Under Head Start fiscal year 1995 appropriations, more than 750,000 children between the ages of 3 and 4 are participating in Head Start programs nationwide.

Mr. President, the research of neurobiologists suggests that we may be missing an opportunity to ensure that our children develop to their fullest potential during the early years in life, ages 0-3. The neurobiologists point out that there is a narrow window of opportunity to develop the brain's potential and that to wait until the ages of 3 and 4 when most children begin Head Start programs may be too late to have a significant impact on the brain's development.

I urge my colleagues to examine the research regarding the development of a child's brain that is discussed in the February 19 issue of Newsweek. I ask that the text of the article from Newsweek appear in the RECORD at the conclusion of my remarks.

[From Newsweek, Feb. 19, 1996]

YOUR CHILD'S BRAIN

(By Sharon Begley)

(A baby's brain is a work in progress, trillions of neurons waiting to be wired into a mind. The experiences of childhood, pioneering research shows, help form the brain's circuits—for music and math, language and emotion)

You hold your newborn so his sky-blue eyes are just inches from the brightly patterned wallpaper, ZZZT: a neuron from his retina makes an electrical connection with one in his brain's visual cortex. You gently touch his palm with a clothespin; he grasps it, drops it, and you return it to him with soft words and a smile. Crackle: neurons from his hand strengthen their connection to those in his sensory-motor cortex. He cries in the night; you feed him, holding his gaze because nature has seen to it that the dis-

tance from a parent's crooked elbow to his eyes exactly matches the distance at which a baby focuses. Zap: neurons in the brain's amygdala send pulses of electricity through the circuits that control emotion. You hold him on your lap and talk . . . and neurons from his ears start hard-wiring connections to the auditory cortex.

And you thought you were just playing with your kid.

When a baby comes into the world her brain is a jumble of neurons, all waiting to be woven into the intricate tapestry of the mind. Some of the neurons have already been hard-wired, by the genes in the fertilized egg, into circuits that command breathing or control heartbeat, regulate body temperature or produce reflexes. But trillions upon trillions more are like the Pentium chips in a computer before the factory preloads the software. They are pure and of almost infinite potential, unprogrammed circuits that might one day compose rap songs and do calculus, erupt in fury and melt in ecstasy. If the neurons are used, they become integrated into the circuitry of the brain by connecting to other neurons; if they are not used, they may die. It is the experiences of childhood, determining which neurons are used, that wire the circuits of the brain as surely as a programmer at a keyboard reconfigures the circuits in a computer. Which keys are typed—which experiences a child has—determines whether the child grows up to be intelligent or dull, fearful or self-assured, articulate or tongue-tied. Early experiences are so powerful, says pediatric neurobiologist Harry Chugani of Wayne State University, that "they can completely change the way a person turns out."

By adulthood the brain is crisscrossed with more than 100 billion neurons, each reaching out to thousands of others so that, all told, the brain has more than 100 trillion connections. It is those connections—more than the number of galaxies in the known universe—that give the brain its unrivaled powers. The traditional view was that the wiring diagram is predetermined, like one for a new house, by the genes in the fertilized egg. Unfortunately, even though half the genes—50,000—are involved in the central nervous system in some way, there are not enough of them to specify the brain's incomparably complex wiring. That leaves another possibility: genes might determine only the brain's main circuits, with something else shaping the trillions of finer connections. That something else is the environment, the myriad messages that the brain receives from the outside world. According to the emerging paradigm, "there are two broad stages of brain wiring," says developmental neurobiologist Carla Shatz of the University of California, Berkeley: "an early period, when experience is not required, and a later one, when it is."

Yet, once wired, there are limits to the brain's ability to create itself. Time limits. Called "critical periods," they are windows of opportunity that nature flings open, starting before birth, and then slams shut, one by one, with every additional candle on the child's birthday cake. In the experiments that gave birth to this paradigm in the 1970, Torsten Wiesel and David Hubel found that sewing shut one eye of a newborn kitten rewired its brain: so few neurons connected from the shut eye to the visual cortex that the animal was blind even after its eye was reopened. Such rewiring did not occur in adult cats whose eyes were shut. Conclusion: there is a short, early period when circuits connect the retina to the visual cortex. When brain regions mature dictates how long they stay malleable. Sensory areas mature in early childhood; the emotional limbic system is wired by puberty; the frontal

lobes—seat of understanding—develop at least through the age of 16.

The implications of this new understanding are at once promising and disturbing. They suggest that, with the right input at the right time, almost anything is possible. But they imply, too, that if you miss the window you're playing with a handicap. They offer an explanation of why the gains a toddler makes in Head Start are so often evanescent: this intensive instruction begins too late to fundamentally rewire the brain. And they make clear the mistake of postponing instruction in a second language. As Chugani asks, "What idiot decreed that foreign-language instruction not begin until high school?"

Neurobiologists are still at the dawn of understanding exactly which kinds of experiences, or sensory input, wire the brain in which ways. They know a great deal about the circuit for vision. It has a neuron-growth spurt at the age of 2 to 4 months, which corresponds to when babies start to really notice the world, and peaks at 8 months, when each neuron is connected to an astonishing 15,000 other neurons. A baby whose eyes are clouded by cataracts from birth will, despite cataract-removal surgery at the age of 2, be forever blind. For other systems, researchers know what happens, but not—at the level of neurons and molecules—how. They nevertheless remain confident that cognitive abilities work much like sensory ones, for the brain is parsimonious in how it conducts its affairs: a mechanism that works fine for wiring vision is not likely to be abandoned when it comes to circuits for music. "Connections are not forming willy-nilly," says Dale Purves of Duke University, "but are promoted by activity."

LANGUAGE

Before there are words, in the world of a newborn, there are sounds. In English they are phonemes such as sharp ba's and da's, drawn-out ee's and ll's and sibilant sss's. In Japanese they are different—barked hi's, merged rr/ll's. When a child hears a phoneme over and over, neurons from his ear stimulate the formation of dedicated connections in his brain's auditory cortex. This "perceptual map," explains Patricia Kuhl of the University of Washington, reflects the apparent distance—and thus the similarity—between sounds. So in English-speakers, neurons in the auditory cortex that respond to "ra" lie far from those that respond to "la." But for Japanese, where the sounds are nearly identical, neurons that respond to "ra" are practically intertwined, like L.A. freeway spaghetti, with those for "la." As a result, a Japanese-speaker will have trouble distinguishing the two sounds.

Researchers find evidence of these tendencies across many languages. By 6 months of age, Kuhl reports, infants in English-speaking homes already have different auditory maps (as shown by electrical measurements that identify which neurons respond to different sounds) from those in Swedish-speaking homes. Children are functionally deaf to sounds absent from their native tongue. The map is completed by the first birthday. "By 12 months," says Kuhl, "infants have lost the ability to discriminate sounds that are not significant in their language, and their babbling has acquired the sound of their language."

Kuhl's findings help explain why learning a second language after, rather than with, the first is so difficult. "The perceptual map of the first language constrains the learning of a second," she says. In other words, the circuits are already wired for Spanish, and the remaining undedicated neurons have lost their ability to form basic new connections for, say, Greek. A child taught a second language after the age of 10 or so is unlikely

ever to speak it like a native. Kuhl's work also suggests why related languages such as Spanish and French are easier to learn than unrelated ones: more of the existing circuits can do double duty.

With this basic circuitry established, a baby is primed to turn sounds into words. The more words a child hears, the faster she learns language, according to psychiatrist Janellen Huttenlocher of the University of Chicago. Infants whose mothers spoke to them a lot knew 131 more words at 20 months than did babies of more taciturn, or less involved, mothers; at 24 months, the gap had widened to 295 words. (Presumably the findings would also apply to a father if he were the primary caregiver.) It didn't matter which words the mother used—monosyllables seemed to work. The sound of words, it seems, builds up neural circuitry that can then absorb more words, much as creating a computer file allows the user to fill it with prose. "There is a huge vocabulary to be acquired," says Huttenlocher, "and it can only be acquired through repeated exposure to words."

MUSIC

Last October researchers at the University of Konstanz in Germany reported that exposure to music rewires neural circuits. In the brains of nine string players examined with magnetic resonance imaging, the amount of somatosensory cortex dedicated to the thumb and fifth finger of the left hand—the fingering digits—was significantly larger than in nonplayers. How long the players practiced each day did not affect the cortical map. But the age at which they had been introduced to their muse did: the younger the child when she took up an instrument, the more cortex she devoted to playing it.

Like other circuits formed early in life, the ones for music endure. Wayne State's Chugani played the guitar as a child, then gave it up. A few years ago he started taking piano lessons with his young daughter. She learned easily, but he couldn't get his fingers to follow his wishes. Yet when Chugani recently picked up a guitar, he found to his delight that "the songs are still there," much like the muscle memory for riding a bicycle.

MATH AND LOGIC

At UC Irvine, Gordon Shaw suspected that all higher-order thinking is characterized by similar patterns of neuron firing. "If you're working with little kids," says Shaw, "you're not going to teach them higher mathematics or chess. But they are interested in and can process music." So Shaw and Frances Rauscher gave 19 preschoolers piano or singing lessons. After eight months, the researchers found, the children "dramatically improved in spatial reasoning," compared with children given no music lessons, as shown in their ability to work mazes, draw geometric figures and copy patterns of two-color blocks. The mechanism behind the "Mozart effect" remains murky, but Shaw suspects that when children exercise cortical neurons by listening to classical music, they are also strengthening circuits used for mathematics. Music, says the UC team, "excites the inherent brain patterns and enhances their use in complex reasoning tasks."

EMOTIONS

The trunk lines for the circuits controlling emotion are laid down before birth. Then parents take over. Perhaps the strongest influence is what psychiatrist Daniel Stern calls attunement—whether caregivers "play back a child's inner feelings." If a baby's squeal of delight at a puppy is met with a smile and hug, if her excitement at seeing a plane overhead is mirrored, circuits for these emotions are reinforced. Apparently, the

brain uses the same pathways to generate an emotion as to respond to one. So if an emotion is reciprocated, the electrical and chemical signals that produced it are reinforced. But if emotions are repeatedly met with indifference or a clashing response—Baby is proud of building a skyscraper out of Mom's best pots, and Mom is terminally annoyed—those circuits become confused and fail to strengthen. The key here is "repeatedly": one dismissive harrumph will not scar a child for life. It's the pattern that counts, and it can be very powerful: in one of Stern's studies, a baby whose mother never matched her level of excitement became extremely passive, unable to feel excitement or joy.

Experience can also wire the brain's "calm down" circuit, as Daniel Goleman describes in his best-selling "Emotional Intelligence." One father gently soothes his crying infant, another drops him into his crib; one mother hugs the toddler who just skinned her knee, another screams "It's your own stupid fault!" The first responses are attuned to the child's distress; the others are wildly out of emotional sync. Between 10 and 18 months, a cluster of cells in the rational prefrontal cortex is busy hooking up to the emotion regions. The circuit seems to grow into a control switch, able to calm agitation by infusing reason into emotion. Perhaps parental soothing trains this circuit, strengthening the neural connections that form it, so that the child learns how to calm herself down. This all happens so early that the effects of nurture can be misperceived as innate nature.

Stress and constant threats also rewire emotion circuits. These circuits are centered on the amygdala, a little almond-shaped structure deep in the brain whose job is to scan incoming sights and sounds for emotional content. According to a wiring diagram worked out by Joseph LeDoux of New York University, impulses from eye and ear reach the amygdala before they get to the rational, thoughtful neocortex. If a sight, sound or experience has proved painful before—Dad's drunken arrival home was followed by a beating—then the amygdala floods the circuits with neurochemicals before the higher brain knows what's happening. The more often this pathway is used, the easier it is to trigger: the mere memory of Dad may induce fear. Since the circuits can stay excited for days, the brain remains on high alert. In this state, says neuroscientist Bruce Perry of Baylor College of Medicine, more circuits attend to non-verbal cues—facial expressions, angry noises—that warn of impending danger. As a result, the cortex falls behind in development and has trouble assimilating complex information such as language.

MOVEMENT

Fetal movements begin at 7 weeks and peak between the 15th and 17th weeks. That is when regions of the brain controlling movement start to wire up. The critical period lasts a while: it takes up to two years for cells in the cerebellum, which controls posture and movement, to form functional circuits. "A lot of organization takes place using information gleaned from when the child moves about in the world," says William Greenough of the University of Illinois. "If you restrict activity you inhibit the formation of synaptic connections in the cerebellum." The child's initially spastic movements send a signal to the brain's motor cortex; the more the arm, for instance, moves, the stronger the circuit, and the better the brain will become at moving the arm intentionally and fluidly. The window lasts only a few years: a child immobilized in a body cast until the age of 4 will learn to walk eventually, but never smoothly.

There are many more circuits to discover, and many more environmental influences to pin down. Still, neuro labs are filled with an unmistakable air of optimism these days. It stems from a growing understanding of how, at the level of nerve cells and molecules, the brain's circuits form. In the beginning, the brain-to-be consists of only a few advance scouts breaking trail: within a week of conception they march out of the embryo's "neural tube," a cylinder of cells extending from head to tail. Multiplying as they go (the brain adds an astonishing 250,000 neurons per minute during gestation), the neurons clump into the brain stem which commands heartbeat and breathing, build the little cerebellum at the back of the head which controls posture and movement, and form the grooved and rumpled cortex wherein thought and perception originate. The neural cells are so small, and the distance so great, that a neuron striking out for what will be the prefrontal cortex migrates a distance equivalent to a human's walking from New York to California, says developmental neurobiologist Mary Beth Hatten of Rockefeller University.

Only when they reach their destinations do these cells become true neurons. They grow a fiber called an axon that carries electrical signals. The axon might reach only to a neuron next door, or it might wend its way clear across to the other side of the brain. It is the axonal connections that form the brain's circuits. Genes determine the main highways along which axons travel to make their connection. But to reach particular target cells, axons follow chemical cues strewn along their path. Some of these chemicals attract: this way to the motor cortex! Some repel: no, that way to the olfactory cortex. By the fifth month of gestation most axons have reached their general destination. But like the prettiest girl in the bar, target cells attract way more suitors—axons—than they can accommodate.

How does the wiring get sorted out? The baby neurons fire electrical pulses once a minute, in a fit of what Berkeley's Shatz calls auto-dialing. If cells fire together, the target cells "ring" together. The target cells then release a flood of chemicals, called trophic factors, that strengthen the incipient connections. Active neurons respond better to trophic factors than inactive ones, Barbara Barres of Stanford University reported in October. So neurons that are quiet when others throb lose their grip on the target cell. "Cells that fire together wire together," says Shatz.

The same basic process continues after birth. Now, it is not an auto-dialer that sends signals, but stimuli from the senses. In experiments with rats, Illinois's Greenough found that animals raised with playmates and toys and other stimuli grow 25 percent more synapses than rats deprived of such stimuli.

Rats are not children, but all evidence suggests that the same rules of brain development hold. For decades Head Start has fallen short of the high hopes invested in it: the children's IQ gains fade after about three years. Craig Ramey of the University of Alabama suspected the culprit was timing: Head Start enrolls 2-, 3- and 4-year-olds. So in 1972 he launched the Abecedarian Project. Children from 120 poor families were assigned to one of our groups: intensive early education in a day-care center from about 4 months to age 8, from 4 months to 5 years, from 5 to 8 years, or none of all. What does it mean to "educate" a 4-month-old? Nothing fancy: blocks, beads, talking to him, playing games such as peek-a-boo. As outlined in the book "Learninggames," each of the 200-odd activities was designed to enhance cognitive, language, social or motor development. In a recent paper, Ramey and Frances Campbell of

the University of North Carolina report that children enrolled in Abecedarian as preschoolers still scored higher in math and reading at the age of 15 than untreated children. The children still retained an average IQ edge was 4.6 points. The earlier the children were enrolled, the more enduring the gain. And intervention after age 5 conferred no IQ or academic benefit.

All of which raises a troubling question. If the windows of the mind close, for the most part, before we're out of elementary school, is all hope lost for children whose parents did not have them count beads to stimulate their math circuits, or babble to them to build their language loops? At one level, no: the brain retains the ability to learn throughout life, as witness anyone who was befuddled by Greek in college only to master it during retirement. But on a deeper level the news is sobering. Children whose neural circuits are not stimulated before kindergarten are never going to be what they could have been. "You want to say that it is never too late," says Joseph Sparling, who designed the Abecedarian curriculum. "But there seems to be something very special about the early years."

And yet . . . there is new evidence that certain kinds of intervention can reach even the older brain and, like a microscopic screwdriver, rewire broken circuits. In January, scientists led by Paula Tallal of Rutgers University and Michael Merzenich of UC San Francisco described a study of children who have "language-based learning disabilities"—reading problems. LLD affects 7 million children in the United States. Tallal has long argued that LLD arises from a child's inability to distinguish short staccato sounds—such as "d" and "b." Normally, it takes neurons in the auditory cortex something like .015 second to respond to a signal from the ear, calm down and get ready to respond to the next sound; in LLD children, it takes five to 10 times as long. (Merzenich speculates that the defect might be the result of chronic middle-ear infections in infancy: the brain never "hears" sounds clearly and so fails to draw a sharp auditory map.) Short sounds such as "b" and "d" go by too fast—.04 second—to process. Unable to associate sounds with letters, the children develop reading problems.

The scientists drilled the 5- to 10-year-olds three hours a day with computer-produced sound that draws out short consonants, like an LP played too slow. The result: LLD children who were one to three years behind in language ability improved by a full two years after only four weeks. The improvement has lasted. The training, Merzenich suspect, redrew the wiring diagram in children's auditory cortex to process fast sounds. Their reading problems vanished like the sounds of the letters that, before, they never heard.

Such neural rehab may be the ultimate payoff of the discovery that the experiences of life are etched in the bumps and squiggles of the brain. For now, it is enough to know that we are born with a world of potential—potential that will be realized only if it is tapped. And that is challenge enough.

EXECUTIVE SESSION

EXECUTIVE CALENDAR

Mr. GRASSLEY. Again, for the majority leader, I ask unanimous consent that the Senate immediately proceed to executive session to consider the following nominations on today's Executive Calendar: Executive Calendar

nominations Nos. 502, 531, 532, 533, 535, 536, 537, 538, 539, and all nominations placed on the Secretary's desk in the Air Force, Army and Navy.

I further ask unanimous consent that the nominations be confirmed en bloc, the motions to reconsider be laid upon the table en bloc, that any statements relating to the nominations appear at the appropriate place in the RECORD, the President be immediately notified of the Senate's action, and that the Senate then return to legislative session.

The PRESIDING OFFICER. Without objection, it is so ordered.

The nominations considered and confirmed en bloc are as follows:

AIR FORCE

The following named officer for appointment to the grade of general while assigned to a position of importance and responsibility under Title 10, United States code, Section 601:

To be general

Lt. Gen. Michael E. Ryan, 000-00-0000, U.S. Air Force.

DEPARTMENT OF DEFENSE

Kenneth H. Bacon, of the District of Columbia, to be an Assistant Secretary of Defense. (New Position)

Franklin D. Kramer, of the District of Columbia, to be an Assistant Secretary of Defense.

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Joseph J. DiNunno, of Maryland to be a Member of the Defense Nuclear Facilities Safety Board for a term expiring October 18, 2000. (Reappointment)

AIR FORCE

The following-named officer for promotion in the Regular Air Force of the United States to the grade indicated under title 19, United States Code, section 624:

To be brigadier general

Col. Timothy J. McMahon, 000-00-0000

The following-named officer for appointment to the grade of lieutenant general while assigned to a position of importance and responsibility under Title 10, United States Code, Section 601:

To be lieutenant general

Maj. Gen. Kenneth E. Eickmann, 000-00-0000, United States Air Force

The following-named officer for appointment to the grade of lieutenant general while assigned to a position of importance and responsibility under Title 10, United States Code, Section 601:

To be lieutenant general

Maj. Gen. Richard T. Swope, 000-00-0000, U.S. Air Force

ARMY

The following-named officer for reappointment to the grade of lieutenant general in the United States Army while assigned to a position of importance and responsibility under title 10, United States Code, section 601(a):

To be lieutenant general

Lt. Gen. John G. Coburn, 000-00-0000, U.S. Army

The following-named officer for appointment to the grade of lieutenant general in the United States Army while assigned to a position of importance and responsibility under title 10, United States Code, section 601(a):

To be lieutenant general

Maj. Gen. John J. Cusick, 000-00-0000, U.S. Army

LEGISLATIVE SESSION

The PRESIDING OFFICER. Under the previous order, the Senate will return to legislative session.

APPOINTMENTS BY THE MAJORITY AND MINORITY LEADERS

Mr. GRASSLEY. Mr. President, I ask unanimous consent that pursuant to Public Law 103-432, the following members be named to the Advisory Board on Welfare Indicators:

Jo Anne B. Barnhart, of Virginia; Martin H. Gerry, of Kansas; Gerald H. Miller, of Michigan, upon the recommendation of the majority leader, and Paul E. Barton, of New Jersey, upon the recommendation of the minority leader.

The PRESIDING OFFICER. Without objection, it is so ordered.

ORDERS FOR FRIDAY, MARCH 29, 1996

Mr. GRASSLEY. Mr. President, I further ask unanimous consent that when the Senate completes its business today, it stand in adjournment until the hour of 10 a.m. on Friday, March 29; further, that immediately following the prayer, the Journal of proceedings be deemed approved to date, no resolutions come over under the rule, the call of the calendar be dispensed with, the morning hour be deemed to have expired, and the time for the two leaders be reserved for their use later in the day; that there then be a period for morning business until the hour of 12:30, with Senators to speak for up to 5 minutes each except for the following: Senator THOMAS, 30 minutes; Senator DORGAN, 20 minutes; Senator HATCH, 20 minutes; Senator COHEN, 15 minutes; Senator FAIRCLOTH, 10 minutes; Senator HUTCHISON, 5 minutes; Senator WELLSTONE, 10 minutes; Senator MURKOWSKI, 15 minutes; Senator GLENN, 15 minutes; and Senator MCCONNELL, 10 minutes.

The PRESIDING OFFICER. Without objection, it is so ordered.

Mr. GRASSLEY. I thank the Chair.

PROGRAM

Mr. GRASSLEY. Mr. President, the leader would like me to inform all of our colleagues that there will be a period for morning business for 2½ hours to accommodate a number of requests by Members. It is hoped that during tomorrow's session, the omnibus appropriations conference report will become available. Senators should therefore be aware rollcall votes are possible during Friday's session. The Senate may also be asked to turn to any other legislative or executive items for action.

ORDER FOR ADJOURNMENT

Mr. GRASSLEY. Mr. President, if there is no further business to come before the Senate, I now ask unanimous