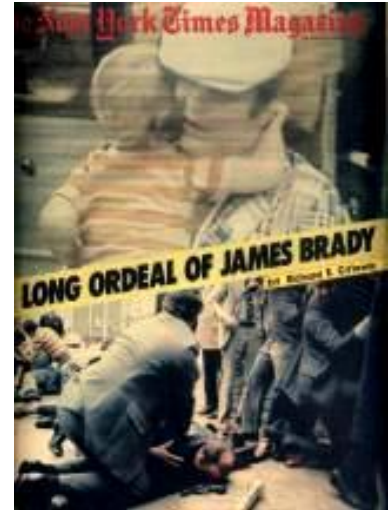


**The Long Ordeal of James Brady**  
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*The six months since the President's press secretary walked into an assassin's line of fire have been a slow, painful, often courageous period of recovery...*



**I**t all began with a voice over the George Washington University Hospital intercom system: “All physicians in the trauma team to the ER. All physicians in the trauma team to the ER.” It was the hospital’s Code Orange disaster plan.

When a single hospital administrator drops his reptilian doze and shows signs of life, it usually signals something extraordinary. When the Code Orange alert brought three high-level supernumeraries charging out of the administration building across the street and running through the rain puddles to the hospital’s 22d Street entrance, I knew that the disaster unfolding on this gloomy afternoon in Washington last March 30 was of unusual proportions.

It wasn’t long before the dimensions of what had taken place minutes before and blocks away outside the Washington Hilton Hotel became clear. Peering down the north corridor of the hospital and through the glass doors of the Washington Circle emergency entrance, I saw a long black limousine pull up. The Presidential flag on the front fender and the escort of men in three-piece suits, with communications plugs in their ears, left little doubt as to whose limousine it was.

Everyone old enough to remember that November day in 1963 when John F. Kennedy was assassinated knows where he was when he heard the first bulletin. My elementary-school class in Trenton, N.J. was ready to leave for home when the word came. Now, almost 17 1/2 years later, I was a chief neurology resident at George Washington University Hospital, hurrying toward its emergency room to see if I could lend assistance to a critically wounded president of the United States and two members of his party.

The first clue the hospital received about the shooting of President Reagan; James S. Brady, the White House press secretary; a Secret Service agent and a Washington

policeman had come through a local policeman who had accompanied a cardiac–arrest victim to the emergency room. Listening to his walkie–talkie, he heard police messages about the shooting at the Washington Hilton Hotel. Dr. Joyce Mitchell, the emergency–room attending physician that day, reasoned that victims of the shooting would probably be sent to the hospital because of its proximity to the hotel. She instructed that the trauma team be summoned.

A moment later, the white Trimline phone that sits on the right–hand corner of the E.R. secretary’s desk rang. That unobtrusive phone, usually buried under a mountain of lab slips, is the White House hot line. Installed during President Nixon’s tenure on Pennsylvania Avenue, it rarely rings, and when it does, it is usually a mistake. This time, when nurse Wendy Koenig answered it, she was told that the Presidential motorcade was en route to the hospital. E.R. nurses quickly prepared resuscitation–bay beds 5A and 5B. A second message from the White House that the motorcade was bringing two agents with gunshot wounds put a surge of adrenaline into the system.

Patients in the waiting room outside were startled when an emergency–room attending physician lost his composure in trying to empty the E.R. “Get out! Get out of here now!” he yelled at them, without explaining why.

The treatment and the subsequent full recovery of the President from the gunshot wound in the chest he suffered have been well documented. But the case of Jim Brady, shot in the head and the most grievously wounded that day six months ago, began in confusion almost immediately with the erroneous report of his death, and has continued through subsequent months to be misunderstood by a public for whom the mysteries of the brain and its functions defy easy explanations.

It is a medical case that at once illuminates how far the skills of neuroscience have progressed in recent years, and how much we still have to learn. It is a case in which no easy magical cures are available; it is also a case where the ineffable, instinctive will for survival combines with medical technology to produce recoveries that only a decade or so ago would have been thought beyond the reach of science.

**I** first saw Mr. Brady on bed 5B. ER nurses scissored away his blue business suit and stashed the pieces in a plastic bag underneath the gurney. The press secretary was comatose and a quick look at the wound on the left–center of his forehead produced a neurological assessment that was straightforward and clearly catastrophic. His face was distorted, his forehead shattered open and his eyes swollen shut by the dissection of blood beneath the skin. Part of his brain was visible. When doctors tested his reaction to a painful stimulus, a standard diagnostic maneuver on comatose patients, Mr. Brady had no movement on his left side and his right side moved only in response to the

deepest pain administered.

The routine things happened in quick succession: An intravenous line was inserted in his left forearm, a Foley catheter into his urinary tract, arterial blood was sampled for oxygen and carbon–dioxide concentrations and acid–base balance, and venous blood was taken for typing and a multitude of base–line laboratory studies. His blood pressure was tremendously elevated: 240 over 160. His rapid, shallow breathing necessitated the insertion of an en–dotracheal tube, a clear, soft plastic tube about the size of a felt–tip pen that goes down the windpipe, or trachea. To completely seal off the lungs from saliva, blood and vomit, the balloon “cuff” that encircles the tube was blown up until the tube was firmly wedged in the trachea. Respiratory support equipment was attached to the tube.

The average male brain, a mushy ovoid mass composed of 90 percent water, weighs 1,500 grams (a little more than two and a quarter pounds). The brain and cerebrospinal fluid form a closed system inside the skull, and there is little spare room for anything else. A common response of the brain to many kinds of traumatic injury is swelling, and obviously one of the worst injuries is a bullet wound. The laws of physics dictate that the energy of a speeding bullet be absorbed by its target. When that target is a human head, only part of the energy can be absorbed by bone and cerebrospinal fluid. The brain tissue itself must receive the remaining crushing shock of energy. While the shearing of nerve fibers and tearing of blood vessels — and any hemorrhage that may result—account for specific local damage, the shockwave dissipation of a bullet’s energy causes additional widespread brain damage and the sudden loss of consciousness. The brain reacts within seconds with tremendous swelling—a no–win situation, since it is rapidly trapped and squeezed against the rigid skull.

Unless it is stopped, this rapid swelling of the brain is uniformly fatal because the brain stem, which contains the seat of cardiac, respiratory and other automatic life–support functions, is pushed through the bottom of the skull — literally “squeezed to death.” Mr. Brady’s unresponsiveness and tremendously elevated blood pressure were signs that this process was already happening. Removing part of the skull and any “extraneous” matter in the head are obvious ways to provide more room and prevent this fatal “herniation.”

Neurosurgery resident Dr. Jeff Jacobson instructed that the drugs mannitol and dexamethasone be given by vein. The sugar mannitol promotes a vigorous excretion of water from body tissues. This water excretion, called diuresis, results in a reduction of the volume and pressure of cerebrospinal fluid, thus gaining precious time against the progressive brain swelling and its catastrophic consequences. The adrenal steroid hormone dexamethasone is given to maintain this reduction of pressure and swelling.

About 10 minutes after his arrival, the emergency team had stabilized Mr. Brady’s

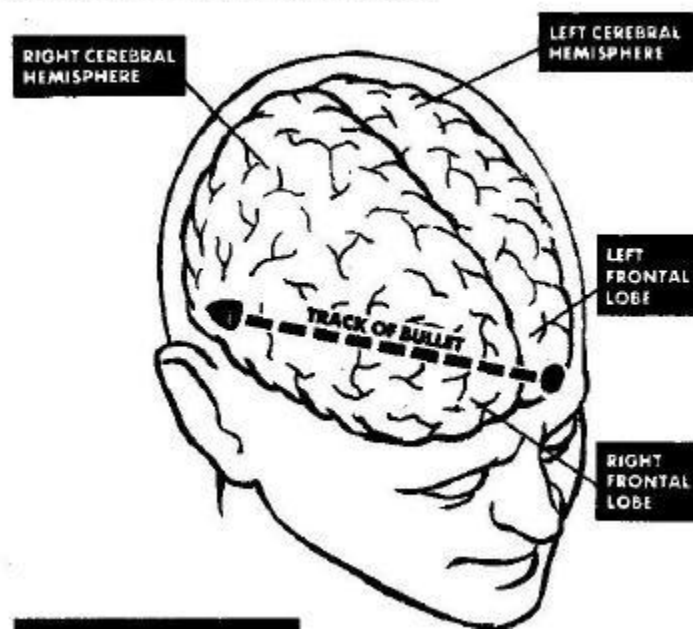
condition. Though those in attendance had little hope of his survival, they moved on to the next step.

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I was waiting in the hospital's CAT-scanner room. The patter of feet and the hissing of the respirator signaled Mr. Brady's arrival at the scanning suite. The press secretary was deeply comatose now. Four of us lifted his dead weight onto the scanning couch. I cradled his head in my hands, positioning in inside the scanning gantry. Dr. Arthur Kobrine, the professor of neurosurgery who would take charge of the expanding medical team attending Mr. Brady, walked in just as the fourth picture was being completed. This is what the scan showed:

Mr. Brady's left forehead and frontal sinus were shattered by the impact and possible explosion of the "devastator" bullet fired by the assassin as the press secretary strode at the President's side into the line of fire. The shock waves of the impact had formed air bubbles inside both his eyes. The bullet, whose track was marked by a train of bone fragments, metal and air, tunneled through the tip of the left frontal lobe, severed the front part of the corpus callosum, (a major nerve structure connecting the right and

### **JAMES BRADY'S HEAD WOUND**



left halves of the brain), and passed through the fluid-filled lateral ventricle on its course to the right frontal lobe. Brain swelling was evident, and a large blood clot was present in the right temporal lobe. Fortunately, the hemorrhage was close enough to the surface not to have destroyed the deep collections of nerve cells in the midline of the brain, although the sheer site of this "foreign" mass was causing distortion and compression of the brain stem. In short, Mr. Brady's injury was grave, but not an automatic death sentence if he could be treated quickly enough.

Convinced that he had seen enough and had to take immediate action, Dr. Kobrine aborted the scan and had Mr. Brady immediately taken to the operating room.

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Meanwhile, one reported had slipped into the hospital and managed to station himself outside the CAT-scanner doorway where he could peer in on the action and later quote what he overheard.

In any crisis situation like the one we had on our hands, knowledge—even rumor—becomes power, and everybody seemed to want to get into the act. Outside, on Washington Circle, where television microwave antennas had blossomed among the spring tulips, “insiders” and “hospital sources” gave their stories, ending always with the disclaimer: “Just don’t use my name.”

The media watched us while the nation watched the media handle the raw events of a story, with all its stops and false starts. In the papers and on the evening news, unconfirmed reports revealed that Mt. Brady’s CAT scan “looked like a disaster,” that he had suffered “extensive brain damage,” that “few people survive such a wound” and that “his chances of survival aren’t good.” No one quite knows the sequence of events that led up to it, but at 5:13 P.M., three hours after the shooting, Dan Rather on the CBS network told the nation: “It is now confirmed that Jim Brady has died.’ Moments after that announcement, a Secret Service agent burst into the ER and wanted to know where Mr. Brady’s body was.

By that time, reporters had gathered in lecture room 101 in the medical school’s Ross Hall, across the street from the hospital. Lyn Nofziger, Mr. Reagan’s former press secretary in California, filled in for the wounded Jim Brady, and held briefings at the corner of 22d Street and Washington Circle, relating the first of the President’s jokes, made before going into surgery to have the bullet removed from his lung. After word reached the White House Situation Room that surgery on the President was nearing successful completion at 5:20 P.M., it was decided that further word on the President and Mr. Brady should come from the hospital’s doctors. As the grim afternoon turned into somber evening, many of the reporters and media crew quit the rain for Ross Hall and waited for a medical briefing from Dr. Dennis O’Leary, the dean of clinical affairs at George Washington, which came at 7:30.

Carrying books, George Washington medical students came in droves to see what was happening. Though the students balked at the invasion by members of the press and their own eviction (“Hey, this is our school. You get out!”), almost everyone else seemed to enjoy the national attention. Even more, they seemed to enjoy the Secret Service.

A mutual fascination sprang up quickly between the medical staff and the Secret Service, the kind one expects from exotic insects in bell jars placed next to each other on a shelf. Agents from the Presidential detail are recognizable not so much for their outward appearance as for the feeling of awe they induce in mortals who cross their paths, and proximity did not abate that curiosity about the Secret Service or their mystique. A consensus quickly formed that the Presidential protection agents (the ones in suits) were the most enigmatic, intimidating and the best looking. The counter snipers (SWAT team), who were stationed on medical-center rooftops and rarely waved back to the

curious milling on the streets below, were the most theatrical. They each packed a small arsenal, and outfitted in their high black boots, midnight–blue uniforms with country–club ascots and baseball caps turned around with the peak in the back (so as not to interfere with sighting, I guess), they were the essence of imperial Storm Troopers. Finally, the Uniformed Division (the uniformed White House guards) turned out to be the most accessible and, in retrospect, the most romantic, judging by liaisons they have made with the hospital staff. To this day, they remain at the hospital, guarding Mr. Brady’s room.

The inner sanctum of medicine held a similar mystique for the agents. Standing with a Uniformed Division agent at the junction of the 22d Street entrance and the operating wing on the first floor, I listened to him expound about his friend who was one of those standing guard during Mr. Reagan’s surgery. “He just finished his academy course a few weeks ago, and all of a sudden he finds himself dressed in green and peeking through a mask. He said he thought he was going to pass out when they started cutting the Chief open—but he just held on.”

**B**ecause primitive neurosurgery was practiced before man first learned to write, its beginnings are unrecorded. Skull fragments tell us that it was widely, if not always wisely, applied during the Neolithic period. The venting of blood, evil spirits, bone fragments, pus and spearheads by trephination—that simple act of boring a hole in a human skull—was one of the first operations performed in mankind’s early history.

The Babylonians knew of the brain’s contralateral representation of the body (i.e., the right and left hemispheres of the brain control functions and movements on opposite sides of the body), and classified brain injuries in much the same way we do, though there was little they could effect in the way of cure. Before the 19th century, surgical attack was limited to disease that made its way to the skull surface. For millenniums, the contents of the cranium were inaccessible. Surgical techniques for opening the head without killing the patient progressed at a slow pace. The first operation in which a surgeon knew where to look for disease inside the skull was performed in London in 1884. Although both diagnostic and surgical neurological techniques progressed rapidly, in 1906 the mortality rate for brain operations was still so high that colleagues of the American neurosurgical pioneer Harvey Cushing, then at Johns Hopkins, urged him to reduce his efforts at the fledgling specialty of neurosurgery. With the arrogance that has become associated with neurosurgeons, Cushing refused, and he explored every avenue of technique until, by 1931, his surgical mortality rate had fallen to only 8.7 percent, a rate not much higher than today’s.

Since then, modern neuroscience has made incredible strides, especially with the techniques developed in treating traumatic head wounds suffered on the battlefields of World War II, the Korean War, and the Vietnam War. With each succeeding war, military doctors became increasingly successful at treating wounds that in the past inevitably would have been fatal. The sheer number of severe head wounds doctors saw increased dramatically, and in Vietnam in particular, with helicopter evacuations of the wounded within minutes to teams of neurosurgeons in field hospitals, successful surgical procedures were developed and refined. The lessons of war were transferred to American hospitals that had to deal with casualties of a violent civil society. Time, it was discovered, was one of the most important factors in determining survivability: Those soldiers who were transported immediately to medical facilities had the best outcomes. Had James Brady's injury not occurred in the daytime, when full services and personnel were available, and had circumstances of the assassination attempt not permitted rapid transportation to a nearby hospital for highly advanced medical treatment within four minutes of the shooting, Mr. Brady might not have survived his wound.

My marginal participation ended in the CAT scan room when Mr. Brady was taken to the operating room. Dr. Kobrine will not comment on details of the operation, but this much has been pieced together from discussion with members of the surgical team, published reports and knowledge of standard neurosurgical procedures. The team began operating on Mr. Brady with a procedure called craniotomy, the opening of the skull. In general, this is performed by incising the skin across the top of the skull from ear to ear, pulling it back, and controlling bleeding along the edges with metal spring clips and hemostats.

With the skull bone at last exposed. Quarter-inch burr holes are drilled into the skull around the operating site with a sterile hand cranked brace and bit. Invented at the turn of the century by an Alabama surgeon named Hudson, the burr bit remains as much a part of modern neurosurgery as the Gigli wire saw that is threaded from one burr hole to another to saw the bone away from the inside out. Leonardo Gigli, an Italian gynecologist of the 19th century, originally invented his wire chain saw for cutting the middle of the pelvic bone for certain obstetrical operations. The notion of putting the bone "flap" back instead of throwing it away was introduced only in 1899 and practice today varies. In a situation such as Mr. Brady's, with extreme brain swelling and an acute need for more room, the tendency might be to discard the bone, Dr. Kobrine's decision to replace it was influenced by other factors, including cosmetic ones.

Once the surgeon is inside, with the brain exposed, more modern techniques take over, though it might be difficult for a lay observer to believe that the various suckers, scrapers, and doodads are anything but barbaric. A scalpel — the prop of the standard Hollywood model of a brain surgeon — is rarely used. Instead, a pencil-sized vacuum

apparatus sucks away damaged brain tissue into a glass jar. Steady hands are a good asset here, as thousands of nerve cells are lost with each fragment of tissue removed. It is estimated that Mr. Brady lost about 20 percent of his frontal brain tissue, most of it from the right side. The right-hemisphere blood clot spontaneously burst to the surface and was sucked away, arterial bleeding controlled by silver clips, electrified cautery forceps and gelatin sponges. All four members of the operating team either wore magnifying glasses, similar to jewelers' loupes, or used an actual microscope during the repair of two small arteries in Mr. Brady's brain. The flattened bullet itself was retrieved from the side of the head near his right ear. His blood pressure returned to normal range during the course of the operation.

At the end of the six and a half hours in surgery, Mr. Brady was taken to the intensive-care unit. The first part of his ordeal was over.

By all accounts, Mr. Brady's was a strong, forceful and aggressive personality and his colleagues regarded him with respect and affection, a privilege few press secretaries have enjoyed. "They admired his humor, often irreverent and devil-may-care, his ability to enjoy a life apart from the driven politics of Washington and the fact that he never seemed to take himself too seriously. Six months have now passed since he walked into the line of fire of an assassin and since the team of neurosurgeons at George Washington University Hospital used all the skills of modern surgery to limit the damage of the high-powered bullet that slammed into his brain. It has been a slow, painful and often courageous recovery for a man who was only just beginning to emerge as a respected and jovial member of the new Reagan Administration.

James Brady has largely ceased to be a surgical patient, and his story now focuses more and more on the drama of his struggle to regain as much of his former physical and mental self as is humanly and medically possible. My prognosis for recovery must be measured within the framework of his injury and the uncertainty of how much compensation for the irreplaceably lost cells can occur. It is a recovery clouded not so much by the physical complications — such as the seizures and paralysis Mr. Brady has suffered — as by the question of how much an injured brain can regain its ability to integrate psychomotor functions, abstract reasoning and personality.

At the moment, physical and occupational therapy take up a good part of Mr. Brady's day. He undergoes physical therapy twice a day, at times in his hospital room, but more and more frequently in the physical-therapy department. In addition to paralysis of Mr. Brady's left arm and the partial paralysis of his left leg, he developed spasticity — the stiffening of muscle that leads to jerky and awkward movement and follows the loss of cerebral tissue. The more frontal the injury, the more severe spasticity is. The aim of therapy is to reduce spasticity so that whatever normal movement remains or returns will be as useful as possible.



Mr. Brady's therapy regime is a rather involved program that consists of a combination of passive and active maneuvers designed to "fool" the body's monitoring of proprioception, that kinetic awareness of where the body parts are and what they are doing from moment to moment, and thus reduce the abnormal spasticity. Rotational exercises, weight bearing, standing and walking are some examples of these maneuvers. Mr. Brady took his first steps on July 22, 113 days after the wounding, which was a tremendous psychological boost. A long leg bract provided stability to his left knee and ankle joints, and assistants helped him walk between narrowly spaced parallel bars. He quickly graduated from this contrived situation to a point where he can now walk short distances with the aid of his brace and Lofstrand crutches (the kind that wrap around the forearms), and with an assistant at his side.

Like many patients after a long stay in the hospital, Mr. Brady sometimes has a fuzzy sense of time. His day-night cycles get reversed now and then, and he sleeps a lot. Simple physical activity, such as moving from the bed to a chair, is still difficult and fatiguing, but it represents a degree of freedom and self-control that was formerly impossible. Mr. Brady has made a few outings so far: The first was on the Fourth of July, when he watched the fireworks over the Washington Monument from a hotel window after making a brief appearance at a White House party. Later that month, the Bradys celebrated their eighth wedding anniversary by going to a friend's house for dinner. He also went to dinner on August 18, three days before his fourth operation.

Food continues to give Mr. Brady much enjoyment. He has a standing order for fancy food from the hospital kitchen. Spontaneous parties sometimes occur when friends come to visit him, and Mr. Brady seems to enjoy them, joining in the joking, singing old Illinois college songs. Another link to the outside world and his old profession is a squawk box in his room that lets him keep abreast of activities in the White House Pressroom.

His ability to participate in this range of activities has raised the question of when Mr. Brady will be able to go home. Initially, doctors anticipated he could take weekend leaves in July and gradually stay at home for longer and longer periods, though he would continue to return to the hospital daily for outpatient physical therapy. With his recent seizures and surgery to seal off his leaking sinus, however, that date was moved ahead to Labor Day weekend. He left the hospital at noon on Saturday, Sept. 5, and came back at 10:30P.M. after spending the day at his home in Arlington, VA.

Mr. Brady still has some medical problems, which have come in quick succession. While these were seen as disappointing setbacks, they were not unexpected, given the nature of his illness and the added risk factors of obesity and prolonged confinement in bed. He experienced fever, rash and elevation of his white-blood-cell count as untoward reactions to phenytoin and phenobarbital, drugs given at separate times to

prevent seizures, a predictable sequel to his brain injury. The leak of outside air into the normally fluid-filled ventricles, on April 22, followed by more air and a leak of cerebrospinal fluid from his nose, on April 27, both demanded quick interventions because of the danger of infection and brain abscess. The first of those interventions was surgical, but both caused periods of forced inactivity that interfered with Mr. Brady's progress.

Next were the pulmonary emboli. His shortness of breath was initially taken to be psychological "air hunger," but Mr. Brady's medical doctors insisted on pursuing the symptom and established that blood clots were trapped in his lungs. He went back to surgery for the third time.

Then a flurry of seizures occurred on Aug. 3. A seizure represents a failure of brain inhibition, a sudden electrical discharge of a network containing about 100,000 cells. Where this discharge occurs and how widely it spreads determine the seizure's clinical manifestations. Uninhibited spread throughout the brain is a grand-mal seizure, which is what Mr. Brady had early that morning. The majority of his convulsions during the next nine hours, however, did not spread, but emanated from a small region of his damaged right hemisphere. They were manifested clinically by twitching of his left thigh and knee. Each convulsion caused a paroxysmal rise in intracranial pressure, which again opened up a tract between his brain and one of his sinuses. The copious leak of cerebrospinal fluid from his nose required a fourth operation to obliterate and seal off the sinus.

One of the lesser complications was a case of pneumonia last spring. It was a fluke because, for all appearances, it was a garden-variety pneumonia. And it was something of a relief because pneumonia is something you can quantify. You can see it on an X-ray, you can hear it through a stethoscope, and you can usually make it go away. The complex mental effects of brain injury are less familiar and even more difficult to measure.

The brain is the one organ system that is irreplaceable, not transplantable and does not repair itself. Billions of nerve cells are arranged to receive, transmit, integrate and respond to stimuli from both the body and its internal milieu, as well as our external environment. We are provided with various neural mechanisms for sampling many of the physical properties of the world, forming a holistic concept of it in our minds and reacting to it in ways that are termed characteristically "personal." This personal concept can be altered in several ways: The sense organs themselves may be faulty, the brain areas to which these sensory signals are first transmitted may fail, or the ability to appreciate the signals in terms of time and space and then integrate them with memory and intention and thus achieve a "conscious experience" may no longer be possible. It is this integrating ability that is most commonly affected by cerebral disease.

The quality of change depends on which cerebral hemisphere and what area of it is involved. What significance this has for the patient whose ability to integrate fails him depends on many factors, including the patient's underlying personality before the injury.

In James Brady's case, while it is correct that a major part of his right frontal lobe and part of his left frontal tip were removed as a result of his injury, it is incorrect automatically to equate that state with mental apathy, marked paucity of speech and loss of the underlying personality. The "frontal lobes," so named only because of their location toward the front of the brain, are not homogenous anatomical brain structures, but a collection of nervous subsystems with widespread connections among themselves and to all other parts of the brain. The general action of the frontal lobes is to insert attention and emotion between the perception of an event and one's response to it. This principle applies to simple and complex levels of stimuli and a broad range of responses: from planning how to cross the street without getting hit, to the best way of achieving a desired social position, to evading a touchy question. Both motivational relevance and memory are also involved — i.e., planning and acting based on past experience and future goals.

Damage to the frontal lobes is not manifested by a single syndrome, and signs and symptoms of their dysfunction are not easily quantified. They are more readily appreciated as changes in quality — a problem of what to measure and how.

While each case is unique, patients with extensive frontal-lobe damage tend to exhibit similar problems. The most characteristic behavioral changes are those of goal-oriented behavior. For example, one former patient, whom I'll call Mr. Jones, had his right frontal lobe destroyed by a tumor. Mr. Jones had difficulty with voluntary tasks that were verbally requested, despite the fact that he understood what was wanted of him. When asked to pick up his water glass, for example, he made no response. "Do you understand what I want you to do, Mr. Jones?" I asked. "Yes. You want me to pick up the glass." "Have you done that?" "No." "Can you?" "Yes." "Go ahead and pick it up then," I urged him. No response. If he was thirsty, however, he would pick up the glass and drink from it spontaneously. This same patient had another typically "frontal" symptom: he was easily distracted by irrelevant stimuli, and could not suppress his tendency to turn in the direction of a noise or someone walking by, and in fact responded better to comments aimed at his roommate than to direct questioning. Many of Mr. Jones's intellectual processes remained potentially intact, but neither his own nor another's speech could "get him going," and his attention to irrelevant stimuli led to impulsiveness and fragmentation of his actions.

Mrs. Smith is another patient who sustained frontal damage from a bullet following an unsuccessful suicide attempt. She remained able to play bridge as long as she was not

distracted, and could comment appropriately about news items, but she also demonstrated what is called *Witzelsucht*, a pathological compulsion to make jokes and puns, sometimes at the expense of others. In contrast to her personality before the shooting, Mrs. Smith became shallow, voiced uncensored opinions, and behaved crudely in social settings. Any departure from her routine or failure at a requested task was extremely frustrating, a reaction she assuaged through her newly found voracious appetite. But when Mrs. Smith was in a familiar, nonthreatening situation, she had charming manners, was polite and restrained, and would joke with her visitors, who would then be unable to detect any abnormality after even lengthy visits.

Subtle changes in alertness, emotional response, control of regulatory behavior, high-level problem solving and the ability to plan one's actions appropriately may all be signs, at one time or another, of frontal-lobe damage. But few signs ever remain as permanent features. As the hospital's spokesman, Dr. Dennis O'Leary, has stated about Mr. Brady: "He may not be precisely the way he was before, and undoubtedly there will be some subtle changes. But they may be so subtle that even people who are very close to him are going to have trouble identifying these."

One of the first signs of hope for Mr. Brady's mental recovery was that he began talking a few days after he was shot. Inarticulate grumbles, one-word sentences and counting to three soon gave way to short phrases. This initial observation was important for everyone's morale — physician, patient, press and public — and led to an early optimism.

That optimism was purposely guarded, but making the translation of guarded optimism to the press is difficult. Lay expectation, assumption and experience are vastly different from those of a medical mind thinking in clinical paradigms. The average intelligent person lacks the experience to weigh the gravity of each potential complication and the probability of its occurrence, as well as the significance of medical gain. What doctors regarded as pragmatic caution concerning possible, if not inevitable, complications, the press and the public experienced as fear. When the hospital announced favorable signs, the press translated that as "nothing short of a miracle."

What one can say now is that Jim Brady has gradually attained a level of awareness of what has happened to him. He has also experienced a range of emotions that appear in appropriate situations, has clear preferences and maintains a determined attitude.

Mr. Brady's role as both a source and consumer of news is unusual. He frequently reads *The Washington Post* and *The New York Times*, both of which include articles and reports about himself. He seems to handle this hall of mirrors well. He has a sharp, caustic wit, likes putting people on and may be heard chuckling after they leave the room. Mr. Brady's sense of humor is the first thing most of those who have worked with him closely in the hospital comment on. But then, he has always been known for his wit.

Mr. Brady made his first public appearance on Friday, June 12. A truck bearing a get-well banner came to the hospital and Mr. Brady wanted very much to respond to it. Sporting a tam-o'-shanter golf cap to hide his scarred head, and supported by Kathy Wynne, his physical therapist, Mr. Brady appeared at his hospital window to give the thumbs up sign to his well-wishers and the media. He obviously did not look like Jim Brady before his injury, but many were surprised that he looked better than they expected.

Mr. Brady is doing better than many patients with similar injuries, and one reason may be that his personality before the shooting was a strong one. The same qualities that got him to the top are the qualities that have permitted him to cope well with his current situation. While the machinery for manipulating his analytic skills fully has been damaged, he has retained those skills, and his ability to use them is returning. Though he is technically a different person from the one he was before the shooting, he has retained enough of his characteristically "personal" repertory that most people recognize him as Jim Brady.

While the final extent of Jim Brady's abilities is not known, one can predict what is *not* likely, based on knowledge of his brain damage and his general functioning so far. It is probable that Mr. Brady's overall I.Q., as measured by standard intelligence tests, will remain normal. Similarly, language and allied analytic skills should be relatively normal, as should verbal — though not necessarily visual — memory.

In many ways, Jim Brady approaches the ideal patient. He has a positive frame of mind, a well-structured personality to begin with, and a strong desire to move ahead. A certain political shrewdness has not left him. Two medical residents who had not seen him for some time visited him recently and were surprised that Mr. Brady had apparently remembered their names after a long absence. It took them some time to realize that he had read their nametags but pretended, nonetheless, not to have forgotten them.

The return to his job as White House press secretary — a job President Reagan is holding open indefinitely — is obviously a driving force for Jim Brady. It is a goal shared by his press colleagues and the White House. All of this enthusiasm is supportive, but there is a danger that at some future date the good intentions may take the decision out of the patient's own hands. And while it is conceivable that he will one day be able to resume some of his former duties at the White House, one hopes that outside considerations and sentiment will not determine James Brady's future.

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