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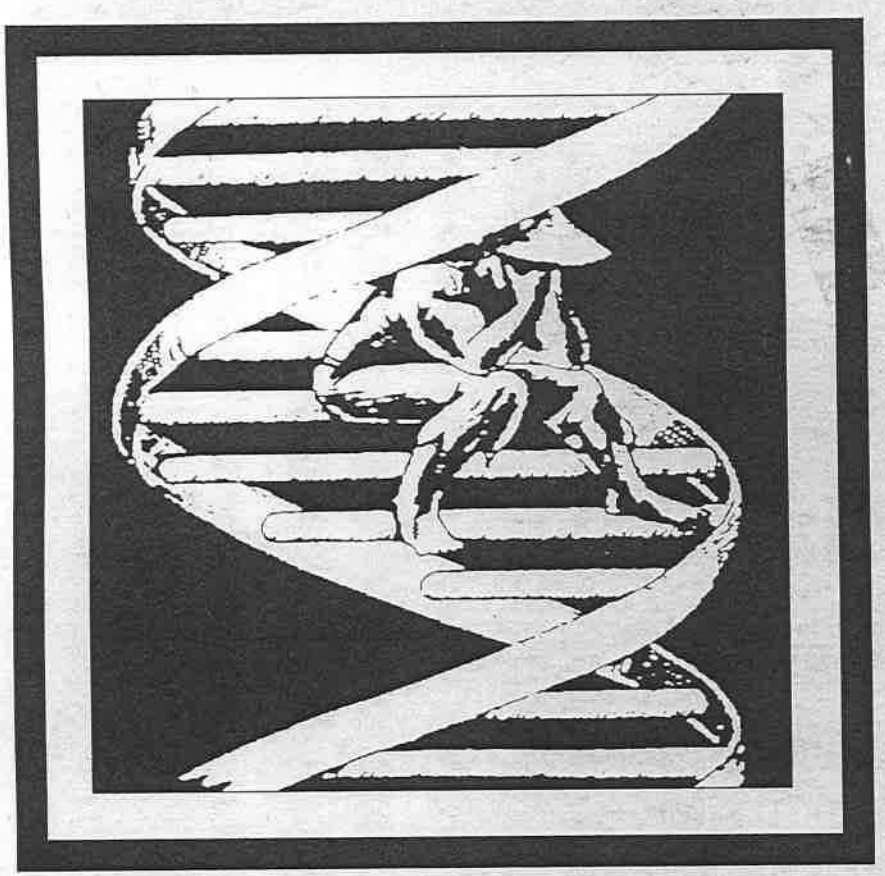

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BRAINS FROM SPACE: MAPPING THE MIND IN 1950s SCIENCE AND CINEMA

JEFFREY SCONCE

In 1956, Dr. Walter Freeman, one of the United States' most renowned neurologists and an American pioneer of the prefrontal and transorbital lobotomy, embarked on a most unusual medical pilgrimage. His goal was to contact personally each patient on whom he had performed a lobotomy since originating the procedure in 1936. Freeman made his trip at a time when the utility of the lobotomy was increasingly in question, and certainly, Freeman's journey was in large part a response to this criticism. Though the previous decade had seen some 10,000 lobotomies performed in the United States, psychiatrists and neurologists became increasingly critical of the procedure during the early fifties, especially as new pharmaceutical treatments emerged as a more effective and less radical therapy for such patients. Despite this growing opposition within the medical community, Freeman continued to champion the lobotomy as a valid therapeutic procedure, and undertook his journey to find empirical proof that the lobotomized had readjusted to life and society ('Did Their Minds Clear?' 1958).

This was not the first time Freeman had sparked national press over the lobotomy issue. Having performed prefrontal lobotomies throughout the forties, Freeman began in the early fifties to champion the less complicated transorbital lobotomy.[1] In a 1952 article entitled 'Mass Lobotomies', *Time* detailed a trip by Freeman to a number of mental institutions in West Virginia where the doctor,

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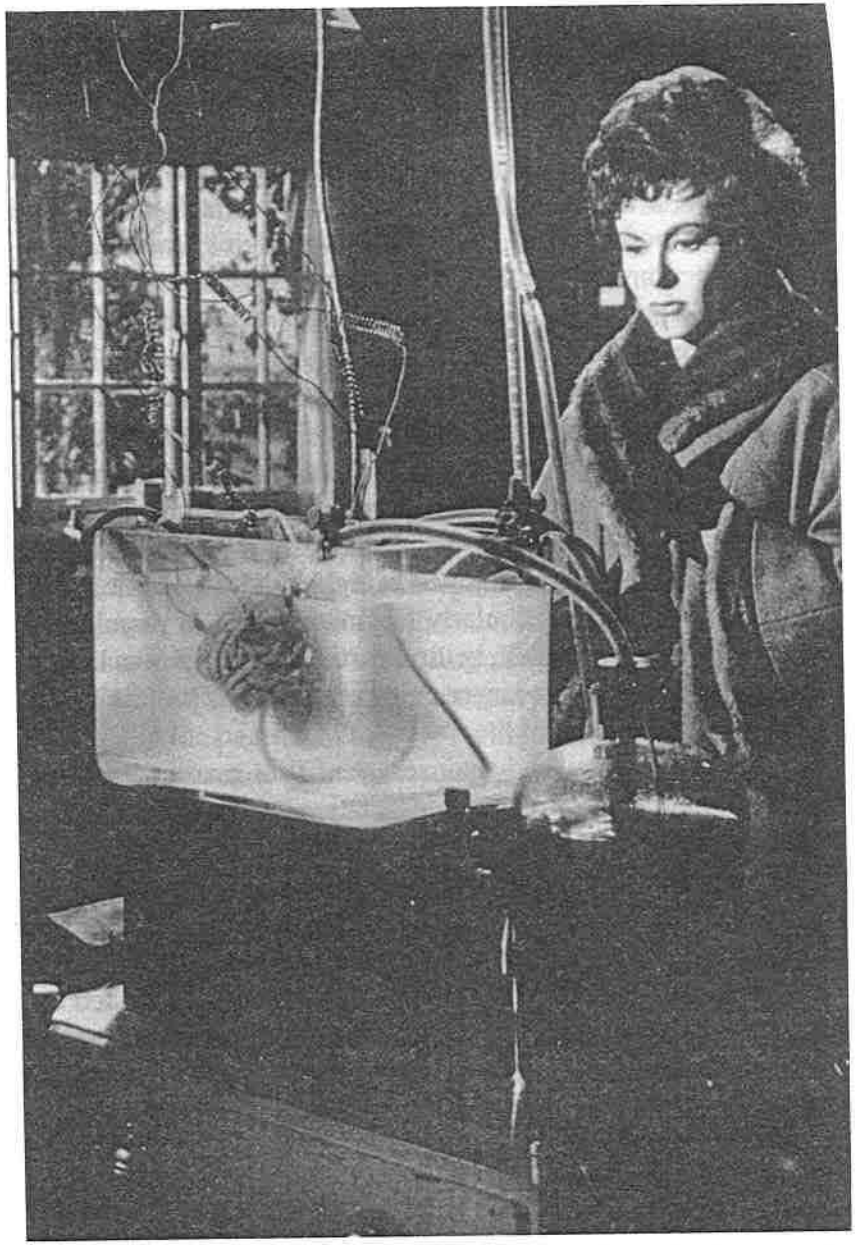
in a surgical whirlwind, performed two hundred transorbital lobotomies in two weeks. The article noted also that while the doctor had once recommended the lobotomy only in cases of potential disability or suicide, he now advocated the transorbital lobotomy for all patients not responding to conservative psychiatric treatment within six months. In a less than subtle comment on this surgical excess, *Time* inserted a gruesome caption beneath a portrait of the neurosurgeon: "Dr. Walter Freeman: Icepicks in eye sockets."[2]

A year after Dr. Freeman's tour of West Virginia, Hollywood cast first-lady-to-be Nancy Davis in the United Artists' production of *Donovan's Brain*. In this adaptation of the Curt Siodmak novel, a ruthless industrialist dies, but his pulsating brain is saved and kept alive by a brilliant young scientist. Those around the young doctor soon realize that his mind is being colonized by the dead man's brain, which in its hunger for power and control telepathically compels the doctor to murder. Previously filmed with Erich von Stroheim in 1944 as *The Lady and the Monster, Donovan's Brain* expanded this story's audience and provided B-movie history with one of its most enduring images: the sight of a disembodied brain floating in a vat of bubbling water as it plots to conquer the world. Although disembodied brain stories can be found in pulp fiction as early as the twenties (Searight and Hammerstrom, 1924), cinematic treatments of this premise begin to proliferate only in the fifties. As Dr. Freeman continued on his journey to contact lobotomized outpatients in the late fifties, an entire cycle of 'brainfilms' illuminated American theaters and drive-ins, including such titles as *Creature with the Atom Brain* (1955), *The Brain Eaters* (1958), *The Brain from Planet Arous* (1958), *Fiend Without a Face* (1958), *The Atomic Brain* (1964), and *The Brain* (1965). Closely related to the brainfilm was the "severed head" film, which included such titles as *The Brain That Wouldn't Die* (1963) and *They Saved Hitler's Brain* (1963).[3] What each of these films shared was the premise of a sentient brain surviving outside of the body, a brain that was most often the mastermind behind a horrific scheme of conquest and control.



An enduring image of B-movie history: the disembodied brain floating in a tank of bubbling water (*The Brain,* 1965). (Courtesy of the Wisconsin Center for Film and Theatre Research).

As both Dr. Freeman's controversial odyssey and this peculiar cinematic subgenre suggest, the human brain was clearly on the mind of fifties America, both in terms of professional debate and popular imagination. Within the medical community as a whole, the fifties marked the beginning of increasingly advanced brain research. As a result of the second world war, physicians and scientists refined many of the surgical procedures developed earlier in the century, which led to the overall development of more sophisticated postwar medical technologies.[4] With these advancements in surgical procedure and laboratory technique, accelerated research and innovation occurred in the fields of neurosurgery, psychosurgery, psychopharmacology, and other related fields. In the cinema, meanwhile, the decade ushered in a renewed emphasis on stories of speculative science, narrating the more astonishing discoveries of the contemporary research laboratory. In a time when science in general enjoyed a higher public profile, brain research presented a particularly fascinating area of popularized science. The brainfilm itself, in turn, participated in its own limited and eccentric way in the larger cultural project of redefining the figure of the human brain.

In a variety of popular discourses, the fifties marked a distinct shift in the conception and representation of the human brain. Indeed, as reported to the American public, Freeman's personal journey can be described as a desperate last attempt to validate his own increasingly disreputable model of the brain, one that saw the mind as a machine that could be corrected by disconnecting its faulty wiring. If the concept of the brain as a machine guided Dr. Freeman and commentators on the lobotomy question in the thirties and forties, the metaphor that clearly began to dominate popular discussions of the mind in the fifties was that of the brain as a topographic space.[5] While research into the localization of brain functions dates back to the nineteenth century (Young, 1970), what distinguishes the 'new' sciences of the mind that dominated the fifties, pursuits as diverse as scientific psychiatry and parapsychology, is an increasingly popularized model of the brain conceived in terms of 'mappable' territory. Accompanying

this metaphorical spatialization of the brain in the public imagination were a variety of discourses concerned with new technologies for exploring and colonizing this occluded space. Like other forms of real estate, the brain was to be surveyed and settled, as well as protected from the hegemony of 'foreign interests'.[6] Just as the public imagination of fifties America turned toward the mysteries of outer space, then, so too did this imagination turn toward the mysteries of an inner frontier within the cranium. Both presented vast, unexplored spaces in which to practice a form of scientific manifest destiny.

Though the brainfilm may seem today to be the most abject cultural detritus imaginable, a symptomatic reading of these films place them at the center of a number of highly charged political and social debates of the period. I would argue the brainfilm cycle exploited an emerging public fascination with the increasingly visible and eternally enigmatic figure of the human brain, dramatizing new 'discoveries' of the medical laboratory and in the process producing often unsettling commentary on issues as diverse as the Cold War, personal identity, and the status of human agency. In the pages that follow, I will present a dialogue between the various strands of brain research prominent in the fifties and the period's unusual cycle of brainfilms. I do so not to argue that the brainfilm unproblematically 'reflects' in narrative form the activities of hard science at the time; rather, I do so in the hopes of demonstrating how both popular science and the cinema worked in tandem to reconceptualize the brain, and how, in turn, this new model of the human brain participated in a variety of political debates during the period. As Michel Foucault eloquently argues in *The Birth of the Clinic* (1973) and as Dr. Freeman demonstrated more viscerally with his lobotomy campaigns, the representation of the body, its organs, and its pathologies is never a neutral process. Such representation is always tied to larger political, social, and scientific debates, whether they concern the ethics of institutionalization or the appropriate use of the ice-pick in surgical procedures. As narratives organized around the icon of the human brain, brainfilms are of interest for the manner in which they

explicitly foregrounded these 'mental politics' of the fifties and early sixties, commenting ultimately on the structure of both subjectivity and society. Casting a disembodied brain as the central protagonist of a movie, in other words, could not help but comment on American culture's conception of the relationship between mental, personal, and political life.

■ MAPS OF CONTROL

Although I plan to discuss elements of a number of brainfilms, I will concentrate especially on the 1958 Howco International production of *The Brain from Planet Arous*. I do so because in its dizzying seventy minutes, this particular film presents a highly compressed pastiche of the cycle's varied elements and characteristic obsessions, telling the story of a young nuclear scientist, Steve March (John Agar), whose mind and body are colonized by an evil brain from space. The film begins with Steve and his assistant Dan (Robert Fuller) making an expedition to investigate unexplained radiation in the desert. While exploring a cave, they are attacked by a gigantic, hovering brain. The brain kills Dan and then takes possession of Steve's body. Steve, now inhabited by the evil brain, visits his fiancée, Sally (Joyce Meadows), who immediately senses that something is wrong with Steve. Later, the evil brain, a being named Gor, informs Steve that it has control of his body and will not relinquish command until it has achieved its plans for earth. Meanwhile, as Sally and her father wonder what is wrong with Steve, they are visited by another hovering brain, Vol, who tells them what has happened to Steve and explains that Gor is an escapee from a prison on the planet Arous. He asks their cooperation in catching Gor and returning him to his home planet. Meanwhile, after many demonstrations of his awesome powers of destruction, Gor, still possessing Steve's body, assembles the world's leaders to inform them that he is going to enslave them and force them to produce an intergalactic invasion force. Before his mad plan can be realized, however, Sally tells Steve how to defeat the brain by using privileged information she has obtained from Vol. The film ends with Steve

tricking Gor into leaving his body and then hacking him to death with a hatchet.

As outlandish as the premise for this film may have been even for its contemporary audience, it is significant that *The Brain from Planet Arous* nonetheless makes frequent attempts to reference the reigning scientific knowledge of the day as a means of establishing narrative credibility. This brain fantasy, in other words, was clearly intended to be grounded in brain 'facts', at least as much as possible. The narrative machinery involved in plotting Gor's death, for example, is particularly interesting for the manner in which it unites emerging scientific knowledge of the period with the dramaturgy of the Hollywood B-film. Significantly, defeating Gor in the film's climactic hatchet fight requires that Sally first consult a printed 'map' of the human brain. There is only one way to kill Gor, Vol tells Sally. First, Gor must be lured out of Steve's body (Gor must leave Steve's body and return to his hovering form once every twenty-four hours in order to 'recharge' his energies). And then, Vol informs her, 'only a heavy blow to that point known to your surgeons as the 'fissure of Orlando' can kill him'. Later, Sally takes an encyclopedia from the shelf and finds a diagram of the human brain that illustrates this fissure. Constructing this 'Achilles Heel' for the evil Gor as an expedient means of narrative closure thus depended on the audience's newly acquired knowledge that the brain was not an undifferentiated mass of tissue, but is instead a highly compartmentalized and topographic realm of individuated functions. While such knowledge had circulated in the scientific community since the previous century, Steve's strategically precise attack on the 'fissure of Orlando' would probably have been meaningless to a movie audience ten years earlier, an audience that would have been for the most part unaware that different areas of the brain perform different tasks and are thus subject to different vulnerabilities. In this way, the cartographic climax of *Planet Arous* hinged on one of the most prominent and widely popularized areas of spatialized brain research in the early and mid-fifties: the 'mapping' of the electrical pathways and processes of the brain.

Interest in brain mapping accelerated in the popular press after 1949, when Dr. Walter Hess, a Swedish ophthalmologist, won the Nobel Prize for his work in mapping the brain by inserting electrodes into the brains of cats. Hess's work, and the work of others that followed, demonstrated that the stimulation of various parts of the brain triggered certain activities, memories and emotions. This technique was called ESB (for electric stimulation of the brain). Magazines of the period dutifully updated readers on the most recent discoveries in this project of mental stimulation and cartography. *Newsweek* reported in 1957, for example, of experiments at UCLA conducted on housecats where, as the magazine described, the animals' heads 'had been rigged up with as many gadgets as women suffer in a beauty parlor' ('Tampering'). The magazine reported further that while 'the UCLA cat manipulators are far from drawing circuit diagrams of the brain's electrical pathways', they had made significant strides in "mapping" the memory process. A regular feature of *Science Digest* called "New Discoveries About Your Brain" reported in 1958 of experiments conducted by Dr. John Lilly, a researcher who inserted electrodes into the pleasure centers in the brains of rats. The doctor then gave the rats the choice of food, water, or a pedal that produced a pleasurable electrical stimulus. In what has since become a bromidic scientific folktale of sorts, the doctor found that the rats, 'frenzied with joy, pressed the pedal again and again until they fell exhausted or dead'.

Scientific psychiatry claimed to need such research and the maps it produced in order to navigate more quickly the 'disordered' minds of American neurotics and psychotics. This goal was motivated economically as well as altruistically. Indeed, one reason the mind became such a visible center of public attention in the fifties may have been because the decade itself was marked by spiraling levels of mental illness. State mental hospitals faced severe overcrowding problems in the fifties, and doctors were desperate for quick cures that would either return these patients to society or, if failing that, would at least make them more manageable while institutionalized.[7] The new brain research held the promise of

spatially locating mental disorder, which, once isolated, could be approached by a variety of therapeutic technologies in a tactical assault.

Applied research on mental illness and brain control assumed a number of forms during the fifties. Researchers at Northwestern, for example, artificially produced mental illness in animals by placing monkeys and cats in special habitats designed for the explicit purpose of driving them 'insane'. Once driven insane (a process requiring three to four weeks), the animals would receive an eclectic program of psychotherapy in an attempt to see which form of therapy would best remove their induced neurosis or psychosis. As *Science Digest* reported, 'Monkeys and cats get everything from love-and-affection psychotherapy to sodium pentothal, electro-shock therapy, hypnosis and brain surgery'. Results were mixed, with one cat remaining 'neurotic' for two years. 'He was tense, rigid, extremely anti-social', the article noted, 'and he constantly drooled' ('Spotlight', 1953).

Human experiments with ESB and mental manipulation also received much attention in the press. Particularly fascinated by the crisis of subjectivity and identity suggested by this research, a number of articles detailed how a person's most hidden memories could be suddenly and vividly activated through electronic stimulation. Under ESB, patients could be made to 'relive' past experiences, speak involuntarily, and experience seemingly unmotivated emotions.[8] With understandable alarm, Americans learned that not only could cats and monkeys be forced electronically to 'yawn, sneeze, shake their heads, and hop about' ('Yes', 1959); humans could also be electronically compelled into such involuntary activity.

The implications of such power over one's mind and individual volition were not lost on scientists and reporters of the time, especially amid the nation's cold war anxiety over communist domination. *Newsweek,* for example, reported on one scientist's research by arguing his work seemed 'to support the distasteful conclusion that motion, emotion, and behavior can be directed by electrical forces and that humans can be controlled like robots by

push buttons' ('Yes', 1959). Such anxiety was even more explicit in an article in *Science Digest* entitled, 'Brain Radio Could Turn Men into Robots' (1957), a report that noted that 'tiny radio receivers buried in the human brain could turn men into mindless slaves . . . "Biocontrol", as the process is called, could make complete enslavement of a nation possible because men would never be able to think for themselves.'

Mapping the brain thus presented new opportunities for control, either as 'benevolent' therapy for the insane or as hardwired ideology for the political citizen. As scientists learned with increasing precision the pathways of the brain, this potential for ideological brain control emerged as the dark underside to the wondrous surfaces produced by medical science's maps of the mind. While articles such as 'Seat of Emotions in Brain Discovered' (1954), 'Explorer of the Human Brain' (1958), 'Now They Can Map Your Brain' (1954), and 'Exploring the Brain's Uncharted Realms' (1958) suggested the mystery and excitement of a medical safari, such accounts also stirred an anxiety over the potential use of this information for mental manipulation in the Cold War. Or, as one

A victim in *Creature With the Atom Brain* (1955) shows the scars of "brain radio," having had control electrodes implanted in his skull. (Wisconsin Center for Film and Theatre Research).

article asked succinctly, 'Brain Rays: Russia's Secret Weapon?' (1955).

Not surprisingly, the brainfilm cycle is replete with examples of 'brain radio', zombified humans, and other forms of colonized consciousness. Shared by almost all brainfilms is the figure of the disembodied brain as a hypertrophic seat of intelligence striving to manipulate those around it to effect some form of conquest. The villainous brain inevitably seeks to surround itself with 'push-button' minions, humans who have surrendered their will to the supreme brain. As mentioned earlier, once Donovan is deprived of his body, the brain of the greedy industrialist continues its schemes by controlling the mind of the young doctor. In *They Saved Hitler's Brain,* the severed head of Adolph Hitler continues to issue orders to subjects from a small South American country, plotting to bring the Nazi party back to power. As an imperialistic evil genius, Gor of planet Arous is also a cruel agent of mind control. 'As long as you are alive', he tells Steve after pirating his body, 'you will have me using your body, directing your brain, turning your simple little will off and on like a key in a lock'. Whenever Gor exerts his power over his unwilling earthling host, Steve grabs his temples in pain as he struggles against the brain's commands, histrionically illustrating the human brain's potential vulnerability to exterior control. Like the Communist Chinese and Soviets, Gor has plans for world domination. Raising the narrative stakes of the film beyond the meager tensions of the Cold War, however, Gor's ambition is to be nothing less than 'the master of the universe'. He plans to use the Earth as a giant factory to build his intergalactic invasion force. When a Soviet representative says that Russia will never cooperate with such a plan, Gor, capable of the telepathic destruction of the entire world, replies calmly, 'Fine . . . then there will be no Russia'.[9] Thus, the imperialist Soviets are made humble by this even more bold and outrageous conqueror, given a dose of their own medicine, so to speak, by a being dedicated to the conquest of all known reality. By collapsing issues of individual and national sovereignty, the brainfilm thus assumes a privileged place within the much discussed body of Cold War hysteria films.

As with the pod people of *Invasion of the Body Snatchers* (1956) and the zombies of *It Came From Outer Space* (1953), brainfilm victims, when under alien command, lose their own forces of reason and will, manifesting in literal terms the characteristic conflict between controlled and controlling consciousnesses so common to fifties' science-fiction in general.

Public concern over brainwashing in the fifties no doubt gave these often incredible tales of megalomaniac brains resonance if not some measure of plausibility. The term 'brainwashing' began to circulate in the nation's vocabulary only in the wake of the Korean War. The government attributed the origin of this practice to the Communist Chinese, although the Russians were also often accused of it. Perhaps the most influential discussion of brainwashing during this time involved a group known as the 'Valley Forge G.I.s'. This was a group of twenty soldiers who had been prisoners of war in China during the Korean conflict. During their stay as prisoners, the men were sent to 'the University of Pyuktong' for 're-education'. While there, a number of the men signed false confessions and divulged sensitive information to their captors. Upon release, these men were separated from the other returning P.O.W.s and sent to the Valley Forge military installation for debriefing. After two weeks of reindoctrination and what one magazine referred to as a 'steady diet of cheeseburgers and cokes', the men were pronounced unbrainwashed and allowed to return to their families.

The saga of the Valley Forge Twenty received much coverage in the American press, and provoked a public discussion of the potential hazards of communist brainwashing ('How U.S.', 1953; 'Valley Forge', 1953; 'G.I.'s Outshine', 1953). In the following years, a number of "scientific" examinations of brainwashing appeared in print, including *The Rape of the Mind* (Meerloo, 1956), *Battle For the Mind* (Sargant, 1957), and *Coercive Persuasion* (Schein, 1961). Brainwashing was often posited as a sinister, invisible process where undetected ideological broadcasts were picked up by some vulnerable receiver within the brain. The comments of C.I.A. director Allen W. Dulles in a 1953 issue of

U.S. News and World Report provide a concise summary of such paranoia.

> We realize how sinister the battle for men's minds has become in Soviet hands. We might call it, in its new form, 'brain warfare' . . . Its aim is to condition the mind so that it no longer reacts on a free-will or rational basis but responds to impulses implanted from the outside . . . The human mind is the most delicate of instruments. It is so finely adjusted, so susceptible to the impact of outside influences that it is proving a malleable tool in the hands of sinister men . . . The Soviet experiment . . . takes two forms. First, the attempt at mass indoctrination of hundreds of millions of people so that they respond docilely to the orders of their master . . . Second, the perversion of the minds of selected individuals who are subjected to such treatment that they are deprived of the ability to state their own thoughts . . . In effect, the brain under these circumstances becomes a phonograph playing a disc put on its spindle by an outside genius over which it has no control. ('Brain Warfare', 1953)

In such rhetoric, the brain was no longer simply a metaphorical battlefield of ideological struggle, but was increasingly portrayed as a material space that had to be defended from opportunistic invasion. Just as Americans began thinking in terms of fall-out shelters, in other words, they were told they also needed some form of ideological lead-plating to ward off communist brainwaves, an insidious force that seemed to permeate the atmosphere.[10]

■ TERRA INCOGNITO

Though perhaps most directly inspired by the merging of medical and political discourses on mappable brains and malleable minds, the conquering brains of the brainfilm cycle were most frequently able to master, control, and brainwash those around them so effectively by employing another prominent area of mental science popularized in the fifties. Just as scientific psychiatry produced a

spatialized brain to be mapped as territory, this rival and 'illegitimate' science, parapsychology, sought to explain more fantastic powers of the brain by appealing to a mental terra incognito. The mid and late fifties saw an explosion of interest in ESP, telepathy, and telekinesis. A wave of popular books on psychic phenomena appeared at this time, including *New Dimensions of Deep Analysis* (Ehrenwald, 1954), *Clock Without Hands* (Edwin, 1955), *Future of the Human Mind* (Estabrooks and Gross, 1961) and *The Hidden Springs* (Haynes, 1961). Some of these books were historical overviews of parapsychology, while others provided personal testimonies about psychic experience. Interest in ESP also occupied the popular press, with magazines as diverse as *Time, New Republic* and *Harper's* printing extensive stories on parapsychology and psychic phenomena. The coverage over the course of the decade ran the spectrum of credibility to skepticism, from articles like 'Uncomfortable Facts About ESP' (1959) to the more derisive, 'Can Your Pet Read Your Mind?' (1951).

Research into the occult powers of the mind has a long history, of course, but what makes post-war parapsychology of particular interest is its increasingly professional aspirations for scientific validation. In the summer of 1953, for example, the First International Conference of Parapsychological Studies took place in Utrecht. The proceedings of this conference, published in 1955 and then annually thereafter, provide an interesting cross section of psychic preoccupations during this period and demonstrate this new discipline's bid for scientific legitimation. The conference was divided into four working groups, each concerned with a specific aspect of psychic phenomena. While Group A worked to quantify parapsychological research, Group B sought to forge connections between parapsychology and psychoanalysis. Papers at the conference included 'Psi, Science and Psychoanalysis', 'The Dream, Schizophrenia and Psi Phenomenon', and 'Parapsychological Research at a Psychiatric Clinic'. Group C, meanwhile, studied 'Spontaneous Phenomena and Qualitative Research' while Group D explored 'The Personality of the Sensitive' (*Proceedings,* 1955, p. 13). What each of these approaches shared was a belief that there

was a power of the mind that remained uncharted, unexplored, and untapped by modern science. The 'sixth sense', a power to transmit thoughts across space either to communicate with another or to influence external objects, presented perhaps the most elusive region of the brain, but one that many psychic scientists were sure would one day be revealed. Parapsychology's professional ambitions coupled with ever more credulous press coverage suggested that telepathic and telekinetic phenomena might be more 'scientific' than 'supernatural', making parapsychology an increasingly common system of explanation in both popular science and cinema.

Reduced to a nexus of pure mental activity, the brain antagonists of the brainfilm cycle most frequently manifested telepathy and telekinesis as an exaggerated weapon of the mind. They could simply control the thoughts and actions of those around them or, as in Gor's case, level entire continents through mental projection. Preoccupation with psychic science took other forms in these films as well. Occasionally, even ordinary humans could manifest such supernatural powers in these films. In the 1958 release *Fiend Without a Face,* for example, a mysterious army of brains with prehensile spinal cords begin to materialize out of thin air and attack people on a Canadian rocket base. The sheer surrealistic bravado of this scenario is eclipsed only by the film's gymnastic efforts to motivate this bizarre phenomenon narratively. As the film tries to explain this strange occurrence in the story's closing comments, the viewer learns that this army of brains is in fact the unconscious telekinetic projections of a neighboring 'mentalist'. When radiation levels are high at the rocket base, this otherwise kindly old man's repressed hostile impulses become materially manifest in the form of the marauding brains. A spirited volley of shot-gun and rifle fire quickly dispatches the brains, however, and in the end Canada is saved from this menace. This scenario thus played on anxiety not only for the possibilities of psychic warfare, but also over the potential for one's own psychic powers to be unwittingly unleashed with perhaps disastrous results.

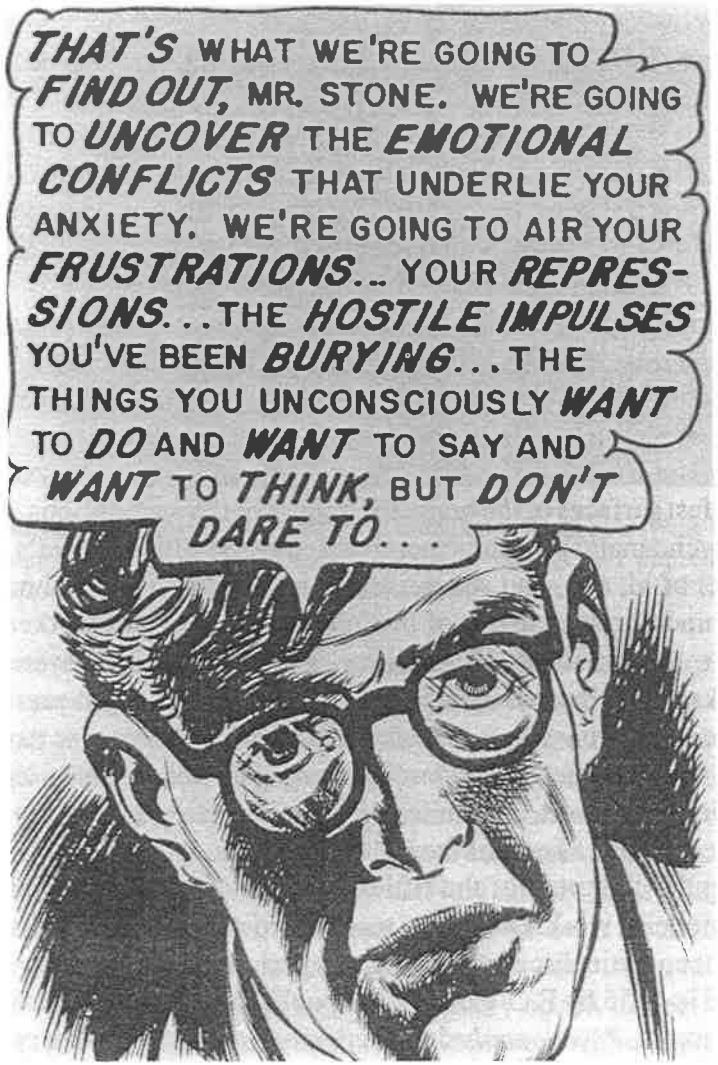
In *Fiend Without A Face* (1958), a man is strangled to death by a flying brain, the material manifestation of a local mentalist's "unconscious projections." (Wisconsin Center for Film and Theatre Research).

Fiend Without a Face's invocation of 'unconscious projections' and 'repressed hostility' as a means of narrative explanation demonstrate yet another 'mysterious' discourse of the mind active in the brainfilm cycle—psychoanalysis. Indeed, for many, the sciences of parapsychology and psychoanalysis significantly overlapped. As the proceedings of the Utrecht conference demonstrate, the parapsychological community actively sought links with this other science of the mind. As *Fiend Without a Face*'s tortured plot suggests, meanwhile, popular thought often confused and collapsed the two sciences as a single, vaguely occult project committed to revealing hidden territories and powers within the brain. This was due in part, no doubt, to psychoanalysis's growing visibility after the war. Though psychoanalysis had been introduced in the United States long before the second world war, it did not flourish as a therapy in America until the fifties, which came to be the decade of analysis. During this time, the number of psychiatrists and patients in the United States quickly multiplied. As more people took to the couch, the vocabulary of psychoanalysis, now familiar terms such as id and ego, complex and drive, began to infiltrate the popular lexicon in a period of visibility and prestige that the discipline would never know again.

Psychoanalysis also conceived of the mind as a topographic space, but did so in radically different terms than the more clinical and empirical work of scientific psychiatry. Whereas neurologists turned to ESB for a flatted road map of an increasingly legible brain to explain the workings of the mind, psychoanalysis relied on a topography of depth to explain consciousness and psychopathology, one that ultimately kept the brain shrouded in profound ambiguity. Both disciplines approached the brain as space to be mapped, but psychoanalysis (at least in its popular articulation) was more concerned with a new hidden realm posited beneath the manifest surfaces of the brain: the empire of the unconscious. Thus, as psychoanalysis became popularized in the fifties, Freud's early model of id, ego, and superego was adopted as a vertical map of the mind, terraced levels of mental organization that worked, not unlike the branches of American government, in a system of checks and balances. Even more dramatic was the split presented between the conscious and unconscious minds. Popular psychoanalysis described the conscious and the unconscious as two warring kingdoms, a manifest surface covering a subterranean, latent realm in a form of mental suppression.

Popular literature of the fifties contains countless examples of this model at work. One of the most interesting artifacts of popular psychoanalytic discourse during this period is a comic book introduced in 1955 by E.C. Comics, the publishers of *Mad* magazine.[11] This comic, *Psychoanalysis,* lasted only four issues before cancellation, but it nonetheless provides a representative example of how psychoanalytic discourse and its metaphors of depth permeated popular thought during this period. On the premiere issue's editorial page, for example, in a column titled 'id bits', the editors supplied a brief description of psychoanalysis.

> To understand the human mind by the study of consciousness alone would be the same as to attempt to learn the structure and



The psychiatrist from *Psychoanalysis* comics frequently lectures his patients in metaphors of depth.

content of the ocean depths by examination of the surface waters. It is in the unconscious mind that are located the basic reservoirs of emotion. It is there that the roots and sources of passion and prejudice, love and hate are hidden. Most emotional

disorders are the result of a tug-of-war between the unconscious and conscious minds. Through analysis, this tug-of-war is dissolved.

This depth metaphor was even more pronounced as the reader encountered the figure of the psychiatrist for the first time in the issue's opening story. Patients, claimed the story's narrator, are 'skillfully guided . . . past the sub-surface reefs of fears and guilts and anxieties [and] eventually discover for themselves the course to self-understanding, peace and true personal happiness which lies like a rich treasure waiting to be unearthed, and the Map to this treasure . . . the Key to its lock . . . is Found Through . . . PSYCHOANALYSIS'.

While scientific psychiatry increasingly defined consciousness as a series of quantifiable regions across the surface of the brain, psychoanalysis imbued the mind and consciousness with a mysterious hermeneutic. It argued that the mind was not to be diagrammed like property, but was to be interpreted like a map to buried treasure. In doing so, psychoanalytic discourse in the fifties helped create the popular conception of the unconsciousness, an entity that to this day stands as a mysterious and even sinister force of agency in popular thought. In this conception, the unconscious is a hidden spring that bubbles beneath the surface of human consciousness, ready to wreak havoc at any moment. Psychoanalysis also insured that while science may eventually understand how the brain works physically, there would always remain this vast hermeneutic of the mind, a shifting ocean of memories and images that would take years to decipher.

While *Fiend Without a Face* explicitly incorporated psychoanalytic concepts to motivate its story of the brain, other brainfilms incorporated the logic of psychoanalysis in more subtle forms. In *The Brain from Planet Arous,* for example, Gor must inhabit Steve's body in order to do his work on earth. Coming from a planet of disembodied geniuses that long ago renounced their material form, Gor finds that returning to a body has unexpected fringe benefits. When inhabiting Steve's body, Gor finds himself

strangely attracted to Sally, whom he describes lustily as 'a very exciting female'. When Steve tells Gor to leave Sally alone, Gor responds, 'Why? She appeals to me. There are some aspects of the life of an earth savage that are exciting and rewarding, things that are missed by the brains on my planet Arous'. The 'unnatural' splitting of mind and body leads to 'unnatural' attraction, a sexuality made perverse by the decadent abstractions of Gor's hyper-intelligence. Enraged, Steve warns Gor not to so much as touch Sally, which causes Gor to respond fiendishly, 'But it is you who will be touching her'. Steve's newfound sexual animation, fueled by Gor's lust, is not lost on Sally. 'You've never kissed me like that before', she says upon Steve's return from the cave, 'Wow!' During the course of the film, Gor, through Steve's body, continues to force his alien attentions on Sally, even ripping her dress at one point. Each encounter ends with Sally breaking away from the lecherous embrace, and Gor/Steve apologizing for 'getting out of control'.

One cannot help but be struck here by Gor's rather overt characterization as an 'id' figure. Following the popular conception of the id as circulated in the fifties, Gor is a licentious force out of control, an entity devoted entirely to satisfying his own demands for pleasure and power. The film continually refers to Gor as a 'bad' brain, a prisoner who has escaped the ordered discipline of the planet Arous. The id-like nature of Gor is further reinforced by the arrival of Vol, the 'good' brain from planet Arous that arrives on earth to recapture Gor. If Gor serves as an id-figure, Vol embodies all the qualities of a superego. Whereas Gor is loud and abusive, Vol is soft-spoken and polite. Whereas Gor is mad with power and wants to control the world, Vol is on a 'friendly mission' and wishes to save the earth from great disorder. As an intergalactic superego, he arrives on the scene in order to bring Gor back under discipline. Though certainly not intentional, the film's distinction between the 'good' brain and the 'bad' brain thus makes narratively manifest the models of depth and split agency circulated by popular accounts of psychoanalysis in the fifties. Freud, it would seem, even in his most fantastic articulations, lends himself to economical dramaturgy.

■ THE 'EVIL' BRAIN

As these examples suggest, the brainfilm cycle raided science for a paradoxical blend of sensationalistic premises and narrative credibility, careening wildly between the facts and theories of a variety of mental sciences. The malevolent, disembodied brain, now a familiar icon of late-night television and science-fiction parody, is the unlikely narrative agent produced at this hybrid intersection of neurology, parapsychology, political psychology, and psychoanalysis. Monsters have taken a variety of unlikely forms in the cinema, of course, but as the jealous and enraged Steve hacks Gor to death with an ax in the closing moments of *Planet Arous,* it is still almost impossible not to be astonished by the cultural logic that would produce a giant, lecherous, imperious, hovering, alien space brain as its villain. A question remains. Informed as they are by the 'wonders' revealed in contemporary discourses of the mind, why should brainfilms so uniformly cast the disembodied brain as a figure of monomaniacal evil? Why, with the exception of Vol, are these figures always 'bad' brains?

Perhaps it is because the brainfilm, more so than any other science-fiction subgenre of the period, harbors a pronounced distrust of advanced science and 'hyper-intelligence'. Typically in these films, good 'productive' science combats the threat of rampant over-intellectualization and the subsequent 'bad' science it inevitably spawns. Such a split mirrored the larger cultural conception that while American science was essentially 'democratic' and 'humanitarian' (even in the twisted and seemingly unrecuperable examples of Hiroshima and Nagasaki), Communist science was imperialistic and instrumentalist, presenting an irresponsible and dangerous pursuit of scientific knowledge at any cost. The 'evil' brain is thus both the product and practitioner of a scientific rationalism that has estranged itself from the human community. After possessing Steve, for example, Gor informs him that he is lucky to be guided by 'one of the greatest intellects on a planet where intelligence is all. I, Gor, in your stupid body, will have power of life and death over this civilization, power like no man

has seen before in the history of your planet'. The implication, clearly, is of unbridled intelligence that has gone too far and has therefore lost its 'humanity', a theme common to other science-fiction films of the time. While neither hostile nor invading, for example, the Krell of *Forbidden Planet* (1956) nevertheless seem to have literally thought themselves out of existence, their extreme intelligence laying waste to their bodies and ultimately resulting in their extinction. Gor, as a renegade brain also existing without a body, searches for power through the manipulation of advanced science, his hyper-intelligence resulting in seemingly inevitable megalomania. Manifest in the figure of the disembodied brain, both in *Planet Arous* and other brainfilms of the period, is the idea that 'mind' without 'body' and thus 'science' without 'humanity' is a dangerous combination.

There is another fear at work here, however, one that counterpoises the fear of the imperious and decadent hyper-brain. Distrustful of the hypertrophic intelligence of the disembodied mind, brainfilms (and often the political and medical discourses that spawned them) manifest an apprehension over the possibilities of humanity's eventual mental annihilation. Whether reclaiming the 'lost' mental territory of the psychotic or defending the mind from the land grabbing 'evil genius' of International Communism, scientists and politicians of the time were greatly concerned with the dreadful fate of 'menticide', a term used in the fifties to describe the 'death of the mind'. Usually, this took the form of ideological homicide, the free-thinking American brain assassinated by Communist propaganda. Even in less explicitly political discourses, however, concern existed over the issue of brain control and mental manipulation. Under the specter of menticide, brain research of the fifties, and more importantly its potential application in a variety of fields, threatened to erode the mental autonomy of the citizen and nation.

The brainfilm cycle eloquently narrated these anxieties by presenting a pitched battle between the singularly supreme brain and a mass of common minds working to resist its influence and thus escape the fate of menticide. This contest between the one brain

and the many, the supreme intellect and a host of malleable minds, points to a fundamental tension informing these films. By drawing on the discoveries of ESB, scientific psychiatry, parapsychology, and social psychology, the brainfilm, one could argue, narrated a crisis in human agency suggested by these various disciplines and discourses. Through its incredible tales of a literalized mental battle, the brainfilm, like these various areas of mental research, ultimately participated in the larger cultural struggle over determining the seat of the human will, intellect and identity.

We can only imagine how readers in the fifties reacted to a headline such as "Your Brain Is a Battery" (1953) and as to whether or not such literature plunged these readers into a metaphysical trauma. But certainly, the schematic brain of psychiatry, the occluded unconscious of psychoanalysis, and the enigmatic terra incognito of parapsychology must have increasingly challenged notions of individual autonomy by suggesting, each in its own way, that human consciousness and agency originate in some unknown elsewhere beyond our control. Perhaps the icon of the disembodied evil brain is ultimately an expression of fear over an increasingly displaced subjectivity, a 'human' identity mapped, charted and finally estranged to the point that the brain itself becomes a sentient being beyond human control. In the end, puny human minds are always able to 'out-think' and thus defeat the superior brain. They are able to do so precisely because they are indeed seen as 'human', entities that are ultimately stronger than the exaggerated intelligence and schematic operations of the threatening brain. And this, finally, is the solace that brainfilms must have offered to their audiences in a time when the soul itself seemed on the verge of being mapped. Brainfilms unleashed the awesome power of the mind only to contain it. They rehearsed the anxiety of a subjectivity besieged by mental science only to restate emphatically the strength of human identity. In the end, the conquering brain always falls in defeat, and in doing so, signals a victory for the individual subject both as a political citizen and as a metaphysical category.

NOTES

1 In the prefrontal lobotomy, an incision is made through the temple while in the transorbital, the approach to the brain is through the eye socket.

2 Freeman's association with 'icepicks' comes from his own story of how he developed the transorbital lobotomy. In the manuscript of his autobiography, Freeman writes, 'I worked out the details in the autopsy room at Gallinger Municipal Hospital. There was no surgical instrument available that was tough enough to perforate the orbital roof in some cadavers, though in others a spinal puncture was sufficient. I selected an icepick as being the only instrument possessing the necessary qualities of sharpness and toughness to do the job. It was with some trepidation that I operated on my first patient . . .

3 The 'severed head' film also survived into the eighties, perhaps most notoriously in Stuart Gordon's 1984 film, *Reanimator.*

4 The technology necessary for the EEG (electroencephalogram), for example, developed from advancements in radar technology during World War II.

5 This is not to say the trope of the brain as machine vanished entirely during this period (current discourses of the brain as a computer or as 'wet-ware' continue this metaphor).

6 Sometimes such contestation was quite literal. In terms of the lobotomy debate, competing conceptions of the brain even provided a site for mobilizing Cold War rhetoric. Just under a year after Freeman's lobotomy marathon in West Virginia, for example, *Time* reported the objections of the Soviet medical community to such procedures. 'Russian psychiatrists have long frowned on lobotomy', the magazine noted, quickly adding in way of explanation that 'for a generation, Russia's doctors have been conditioned to follow, sheeplike, the late Ivan Pavlov, of conditioned-reflex fame' ('Pavlov').

7 In his dissertation on psychosurgery, Jack Pressman describes this rapid growth. 'In the first half of the twentieth century, the nation's system of state mental hospitals grew into a vast collective undertaking. In little over a century, what had begun as a series of small asylums averaging no more than several hundred in population had grown into a sprawling network of large and often immense institutions, some containing as many as 10,000 patients. Patient populations rose alarmingly, even when corrected for rate of population growth. Nationally, state hospital populations increased from 159,000 in 1909 to 480,000 in 1940, roughly equal to the number of beds in all non-psychiatric hospitals combined . . . The hospital population's rate of growth was almost twice that of the general population's rate'. (Pressman, 1988, p. 81).

8 An introductory summary of this research can be found in chapter 13 of *Explorers of the Brain* by Leonard Stevens (1971).

9 As a being of pure brain power, Gor not only practices ESP and telekinesis, but is capable of the total destruction of people, cities, countries, and even entire continents through mental projection. Whenever Gor seeks to destroy, Steve's eyes become black and glossy in a maniacal trance as the evil brain sends his thoughts through space. What is remarkable about these episodes of destruction is they take the form of atomic disaster. The film equates the brain with atomic power throughout the narrative in displays of atomic spectacle. When angry, the brain emits a powerful radiating light that both blinds and burns. Steve's assistant Dan, the town sheriff, and an entire airplane of passengers die from these flashburns during the course of the film. When Gor provides his ultimate demonstration of power before the assembled nations of the world, the film presents stock footage of atomic tests to portray the brain's enormous destructive potential. The film thus links the nuclear anxiety manifest in so many other films of the period to the figure of the alien brain, producing a hybrid narrative agent that binds the mysteries of the brain and the atom. In this respect, *Arous* is not unlike films such as *Tarantula* (1955), *The Amazing Colossal Man* (1957), and *Them* (1954). All irradiate a usually mundane creature to produce a horrific monster.

10 It should be noted, ironically, that while the CIA mounted a public campaign against 'mind-control' during this period, this same agency was involved in administering experimental LSD tests to unwitting American soldiers.

11 *Psychoanalysis* comics was one of a number of comics series introduced by the industry in the wake of congressional hearings on the 'harmful' effects of comics on young readers. In response to these 'seduction of the innocent' hearings, the comic book publishers introduced a number of more 'respectable' titles to improve the industry's image.

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THE LIMITS OF BIOETHICS

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Genetic Screening: Ethical Issues, Nuffield Council on Bioethics, 1993, 115 pages, pb £6.00 from Nuffield Foundation, 28 Bedford Sq. London W1.

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The new human genetics presents bioethicists with both a serious problem and a marvellous opportunity. The opportunity is fairly obvious—the technology opens up a field of new possibilities and ethical situations which are all grist to the academic bioethicist's mill. In the United States, and to some degree in Europe, governments have allowed and encouraged geneticists to create a potentially severe source of social problems. Governments are now generously funding bioethicists (and a few sociologists, too) to examine the 'ethical, legal and social implications' of the new genetics. The result has been an extraordinary proliferation of literature, which is perhaps matched only by the interest of the mass media in the subject.

In the United States, there are complaints that academics have failed to influence public policy, and the same can certainly be said of the U.K. Recently in both countries, there have been major reports on the ethics of genetic screening. While there seems to be