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Author(s)	Daiguji, Makoto; Utsunomiya, Teruo
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The Mind and Technology

From a Psychiatric Point of View

Makoto DAIGUJI and Teruo UTSUNOMIYA

1. Introduction

As we think about the numerous issues that surround modern medical technology, it is not so much the technology itself that is an issue but instead whether it is acceptable to use new technologies or not. If we do use new technologies, are we then going to be burdened with new unknown dangers? Therefore, it is the meaning of using the technology that attracts our attention.

So how is it then that a certain part of medical technology is accepted or discarded? Based on what reasons is this decided? In this presentation, I would like to take up the lobotomy, a technique that took the world of psychiatry by storm and just as soon fell out of favor, a technique that is today thought to be a barbaric procedure. By thinking through the rise and fall of the lobotomy, I would like to think about the meaning of medical technology and the reasons behind the acceptance and avoidance of medical technologies.

2. What kind of medical treatment is the lobotomy and how was it developed?

Using a scalpel (knife) on the human brain is a medical treatment dating from ancient times. The treatment of brain tumors and brain injuries by surgical means also has a long history. However, the first person to use a knife on the human brain to treat psychosis and then to document the procedure was Burckhardt¹⁾, the director of a Swiss mental hospital. In 1890, he succeeded in removing a part of the cerebral cortex in a mental patient who was experiencing excitement. At a time when the general public still regarded the brain as “holy” and it was seen as inviolable, he was unable to continue performing this operation in the face of roaring public outrage. This procedure was eventually redeveloped and renamed the prefrontal leucotomy in 1935 by a Portuguese psychiatrist by the name of Egas Moniz.

Moniz²⁾ got a hint from neurophysiologist John Fulton, and performed the operation of destruction of both sides of frontal lobe on a patient and reported that he had experienced dramatic results, including elimination of uneasiness, anguish from pre-senile depression and anxiety neurosis. This surgical treatment entered the United States the following year in 1936. Freeman and Watts³⁾ renamed the procedure the prefrontal lobotomy, commonly known as the lobotomy.

This treatment spread in a flash, and from 1940 to 1950 around the world more than one hundred thousand people who were treated with this operation⁴⁾. Schizophrenia and manic depressive psychosis were some of the first disorders treated with this procedure. The lobotomy's uses soon spread to various other mental illnesses including what was known then as psychopathy, a disorder of criminals, who also became candidates for

the procedure. “At mental hospitals today there is no human who has an intact frontal lobe” was the reported lament of one psychiatrist⁵⁾. Due to these achievements, Moniz won the Nobel Prize for Medicine and Physiology in 1949. In Japan, this procedure was performed by Nakata⁶⁾ in 1939 for the first time and widespread after World War II and reached its height in 1953, 14 years after entry into Japan⁷⁾. What were the results of this procedure that took the world by storm? Before taking up that subject, I would like to discuss the state of mental hospitals at that time. One reason that lobotomies were widely accepted and used lies in this discussion. American mental hospitals at that time, especially state hospitals, were called the “shame of the state” for the horrible conditions in which the patients were placed. Margolin⁸⁾ describes the conditions at a mental hospital in the following words:

“Padded rooms and tube feeding were in frequent use. Incontinence of urine and feces was common, many patients wore thick leather handcuffs as restraints, great canvas camisoles, locks, straps, ‘muffs’, ‘mitts’, and other devices. They were drilled, counted, searched and herded and many of those best able to work spent their lives scrubbing floors.... Depressives on suicide caution cards were stripped of their possessions, spoon-fed and marched from one room to another. Not only were patients credited with the most exotic-sounding symptoms-echolalia, *flexibilitas cerea*, catatonic stupor—there was always the treat of disorder and violence. It was rare for members of staff to walk around disturbed wards unaccompanied.”

The conditions in Japan were the same. The lobotomies performed amidst these conditions, to borrow Hirose’s words, changed the patient’s face “into the softer expression of a different person overnight”⁹⁾. American newspapers headlines proclaimed the success of the new treatment⁸⁾.

Surgeon's Knife Restores Sanity to Nerve Victims
Wizardry of Surgery Restores Sanity to Fifty Raving Maniacs
Brain Surgery Is Credited with Cure of 50 Hopelessly Insane
Forgetting Operation Bleaches Brain
No Worse Than Removing Tooth

3. Why did the lobotomy fall from favor?

In America it reached its peak around 1949, in Japan in 1953 and after that the use of the lobotomy declined so that after 1960 it became almost obsolete. The rise of the lobotomy was almost entirely the doing of one man, Walter Freeman, the man who had introduced the lobotomy without objectively critiquing the success rate or the sideeffects. From the beginning there were problems, including the rate of death from surgical procedures, the lack of standards for indication of use, the fact that the results from lobotomy were not as big as they had been thought at the time, plus the fact that patients who responded to lobotomy would have possibly responded to insulin shock therapy. After 1952, anti-psychotic drugs were developed and the decline of the lobotomy began, for this and other reasons. However, it was a factor related to the lobotomy itself that contributed to the decline of the lobotomy (in fact, this is the largest single factor for the decline), the fact of the personality changes that were apparent upon long-term observation.

MacRean¹⁰⁾ summarized the personality changes due to lobotomy in the following terms. Immediately after the procedure, tendencies such as a return to infancy, lack of ability to formulate plans, lack of energy, and lack of interest were observed. Patients lost their ability to project their identity and feelings of hurt on others, in essence they had lost empathy and along with it the ability to project their past and present

feelings into the future, they had lost the ability to suffer and worry.

As Schulte stated “Lobotomy is not a radical therapy, it is a treatment with expectations of success from the changing of human personality”⁵⁾. In short, personality change resulted in lack of interest, which in turn left the patient without the ability to identify feelings of anxiety or unease. Schulte⁶⁾ said “Lobotomy is not a treatment, it is the seal of a destructive sentence under the borrowed name of a treatment.” According to survey of Adachi and his colleagues¹¹⁾, 37 years after the operation, 20 schizophrenic patients had worse evaluations than the control group based on symptomatic data and daily actions in the hospital.

In addition, unlike shock therapy or drug interventions, the personality change brought about by surgery on the brain is an irreversible procedure with no possibility of recovery. From this effect of lobotomy on the personality, It became apparent that there was no therapeutic value in the procedure.

4. What has been said about lobotomy from the bioethical standpoint?

When lobotomies were to be used in the 1940s and 1950s, of course, there were no professional bioethicists but by psychiatrists, general practitioners and through mass communication, not a few statements were made on lobotomies that could be said to have bioethical overtones. There were also more than a few doctors in the psychiatric profession who had taken up the scalpel and performed lobotomies themselves only to later discover the problems associated with the procedure and then blamed themselves.

On one hand the newspapers were at first favorable towards the lobotomy due to Moniz’s Nobel Prize and the huge turnaround that the

procedure had produced in psychiatric hospitals, particularly in the deplorable conditions of the state hospitals. However, that reputation changed quickly.

It was not as if there was no criticism of lobotomies when they were first introduced. For example, in 1948, a year before Moniz accepted his Nobel Prize, Gumpert¹²⁾ stated that lobotomies might produce “human vegetables” and called lobotomy “the rape of the soul”.

5. When thinking about modern questions of medical technology, how does studying the decline of the lobotomy contribute to that discussion?

It has been about 50 years since lobotomies were widely used. If we disregard the historical differences, it goes without saying that the decline of the lobotomy cannot be adapted immediately to modern ethics in medical technology. However, there are several points that we, in the modern world, must accept from the history of the lobotomy.

The first is the dislike and refusal of medicine to think of the human mind and spirit as being the same as the physical human. In the era after the psychiatrist Pinel, criminals, societal outcasts, and maladjusted persons were reassessed as “patients with suffering minds” and thus became the objects of treatments. However, the condition of “having a sick mind” was not necessarily recognized and accepted by people in the same manner. Of course, the effects make it possible for us to use the phrase “illness of the mind” or “mental disability”. Compared to physical illness, however, the phrase “illness of the mind” is not nearly as clear. On this point Zilboorg¹³⁾ states that whereas physical illnesses were recognized by people from ancient times, “psychiatry was a discovery of the medical man”. I believe that this is a fascinating comment.

People have the tendency to not accept technology without a very solid base. Good results, a solid background in science, few side effects, these kinds of things relieve opposition but if, in time, even one of these factors is disproved then the medical procedure takes a large amount of criticism as do the humans who do the procedures.

The second is the irreversibility of a procedure. Currently used anti-psychotic medications are sometimes ironically said to cause “chemical lobotomies”. The reason being that these drugs pharmacologically intercept dopaminergic nerve signals selectively (anti-psychotic drugs were at one time called autonomic nerve-blocking agents). However, the effects differ from a lobotomy in that, in the end, they are reversible. When thinking about medical technology, the point of whether a treatment is reversible or not makes a large difference.

The third is Muraoka’s reference to developments on the ultra-modern medicine as “amida kuji” or “the luck of the draw”. Muraoka builds his case on examples of brain death and organ transplants. In other words, for brain death and organ transplants to become established, we must regard loss of the quality of life as death, thus pushing the development of the debate over brain death into a discussion of the concept of death. Informed consent is the wish of the patient to make the decision to use his/her organs and to give permission to prepare his/her body for the possibility of organ transplants. However, to reach this aim, planned preparation is not enough; for actual brain death and organ transplants to occur there need to be various other factors which come about by chance, thus the name “amida kuji” or “the luck of the draw”. Some of the other factors that play a part in this are the progress of techniques of anastomoses of blood vessels and development of immunosuppressive drugs.

At the same time as this stream of development, there were also

certain techniques that were thrown out. From the start, lobotomy was a dangerous procedure involving taking a knife to the brain. Deaths from the sheer lack of refinement of the surgery, not to mention the advent of psychotropic drugs led not to a discussion of whether lobotomy was worth saving or not but instead skipped ahead to the conclusion that lobotomy was no longer necessary.

If there is one part of the “amida kuji” or “the luck of the draw” that we can aim for it would be that religion, different than medicine or ethics, provides a wonderful and mysterious perspective on these matters. Although not related to the medical world, let me take Christianity as an example.

Christianity, after the advent of Protestantism, gave birth to a variety of precepts that came from faith being placed as the foundation of the Bible. This became the guiding principle for people. From the Bible that proclaims, “Love your neighbor”, it was a contradiction for a country to have an army and to lawfully be able to kill people. However, there were military people who turned their backs on God’s commandment that we must love our neighbor and rationalized that it was acceptable to kill their enemies. To these people Luther said, if you yourself take up a sword against the people who are persecuting you then you have turned your back on God’s command to love your neighbor. If, however, you take up the sword against people who are persecuting your neighbors in order to free them from the persecution as they wish, then you are fulfilling your neighbors’ wishes and thus killing becomes justified by God’s command¹⁵⁾.

On the other hand, the Christian peace movements during World War I were greeted with ridicule, but eventually they gained momentum. These peace movements were greatly influenced by the Quaker efforts towards peace. The activities of many Christians who went to the

battlefields without weapons and the statements of peace gained influence and power, and eventually gave rise to a public standard of revolt that overturned the concept of war for the next generation¹⁶⁾.

As I have stated above, Christianity has certainly changed with differing eras and locations and the emphasis has also changed. However, any pattern of thought that has come from Christianity has one point in common, namely that each new way of thinking has changed the era that it was born in. It is this function of religion that we can hope and count on to have great influence on the reform of medical technology.

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