Computer as an Expressive Medium : Research Paper

The 21st Century Psychic Surgery : Telesurgery

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Imposition of Hands

...And he entered the synagogue and continued speaking out boldly for three months, reasoning and persuading them about the Kingdom of God. But when some were becoming hardened and disobedient, speaking evil of the way before the people, he withdrew from them and took away the disciples, responding daily in the school of Tyrannus. This took place for two years, so that all who lived in Asia heard the world of the Lord, both Jews and Greeks. God was performing extraordinary miracles by the hands of Paul, so that handkerchiefs or aprons were even carried from his body to the sick, and the diseases left them and the evil spirits went out... 

(Hebrew 19:8-12)

In the history of Christianity God had performed the miracle by using the man as His instrument. By the ceremoni al imposition of hands, one can be acknowledged the authority to communicate with God as well as mediate God’s miracle through his hands—from forgiving sin to healing. The origin of imposition of hands traces back to the patriarchal times when Jacob bequeathed a blessing and inheritance to his two sons Ephraim and Manasses by placing his hands upon them.  

Myriad of parts in the Old and New Testament state God’s imposition of hands and His miracle via mediated person. Although contemporary church limitedly employs imposition of hands to the ritual usages in the sacraments and confirmation wherein the Holy Ghost is conferred to those on whom hands laid and they are bestowed a certain excellence of power over the Divine mysteries, we still have some vestigial use of imposition of hand in real meanings especially in mediated healing. Whatever we call it psychic surgery, faith healing or heretic.

Psychic surgery : Miracle or Fake

A popular American comic and TV star Andy Kaufman was diagnosed as being at the last phase of lung cancer and turned to psychic surgery after watching ‘Psychic Phenomena: Exploring the Unknown’ aired in 1977 by NBC. In several treatments, a psychic surgeon Ramon “Jun” labo, Jr., the former mayor of Baguio City, put his hands on Andy’s diseased chest and performed psychic surgery with the intervention of divine spirit. But only two months later Andy was dead and hospital x-rays proved that there was no trace of surgery in his chest.  

Was he fleeced or just a failure on psychic surgery? In the skeptic or scientific point of view psychic surgery is a type of non-surgery performed by a non-medical healer. The healer fakes an incision by running a finger along the patient’s body, apparently going through the skin without using any surgical instruments. The healer pretends to dig his hands into the patient’s innards and pretends to pull out ‘tumors’. Using trickery, the healer squirts animal blood from a hand held balloon while discarding items such as chicken livers and hearts.  

This might be what Andy got though. But one of psychic surgeon, Alex Orbito describes this process in a different viewpoint. He considers himself as an instrument of God through which the energy of the Holy Spirit can pass. He explains his process in the following way: “At that moment, I no longer think of myself as Alex Orbito, but as a mere channel of God’s healing energy. When this happens, I first feel a strange coldness all over my body as the spirit descends upon me, then a feeling of great warmth follows. At that moment, I am completely overpowered by the Holy Spirit, which gives me confidence and the complete assurance that all my movements come from the Spirit which does the healing. As I place my hands on the patient’s body, I feel the healing energy surge out through my fingers, causing vibrations and stimulating the cells of the patient’s afflicted part. When in that state, I am not myself, or rather, there is...
The core of the psychic surgery is mediation through imposition of hands. Telepresent Holy spirit authorizes a certain person as His medium and confirms that the man can perform His operation on behalf of God.

"Stir up the grace of God which is in thee, by the imposition of hands"(2 Timothy. 1:6)

Being a faithful believer or proof-seeking skeptic, there are significant reports on the cure effect of psychic surgery and certainly some consider it as a forth dimensional operation or part of alternative medicine. Even though most of these trends regard psychic surgery just as a sophisticated form of 'Placebo surgery'. Why can we not take this mediated surgery as real medicine? What is missing?

Telesurgery guided by science

Science is the institution of authority regarding the production of knowledge and tends to replace this particular social function of conventional Christianity in the west. With this position science has become a key myth maker within society. Science is a key mediator of the public relationship with nature, much as the Roman Catholic Church in the mediaeval times mediated its public’s relationship with God and it is our new religion in the age of biotechnology. All that was once shrouded in mystery is now born again in a material reality that is not dependent on faith but accountability and measurement. And here is another advent of mediated healing authorized by technology. With the revolutionary advance in laparoscopic surgery or microsurgery and information technology, medical surgeons need not be restricted by space dimension. The diagnostic communication dimension is also changed from "blood and guts" to "bits and bytes". Most parts of doctors' diagnosis are performed with electronic or digital devices and the result is reported in the digitized information.

Conventional intact diagnosis disappears. Digitized information is separated from the empirical senses of doctors and patients and able to be transferred via medium anywhere connected by network. Therefore telepresence medicine such as teleconsulting, telediagnosis, cooperative telesurgery and most ambitiously telepresence surgery- is possible.

Telepresence surgery or telesurgery is "a new technology in which a human surgeon manipulates surgical instruments that appear to extend into three dimensional image of a patient’s body in hundreds of miles away while computers perfectly translate the surgeon's movements into the parallel actions of a machine wielding real surgical tools inside a flesh-and-blood patient.”

Shown in Figure 2 and 3, a core system of telesurgery is comprised of a surgeon console and a remote surgical unit. In remote surgical unit a pair of haptic interface arms with teleoperated surgical tools that

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7 Harvey J. Martin III "Unraveling the Enigma of Psychic Surgery" 1999 <http://www.metamind.net/enigmapysur.html>
8 <http://www.sri.com/pet/ts.html>
Figure 3. Telesurgery setting, with master and slave, simulator and video monitors

The apparatus on the right would be located remotely from the patient. The robot arms give the surgeon position control and force feedback. In surgeon console human surgeon operates a master robot unit which transmits surgical input to slave robot arms via communication network. Control of the arms is simplified by recognizing that the master and slave are kinematically identical.

Accompanied by these systems, a surgeon performs a “virtual” operation on a patient. By accurate transmission network, the surgeon’s hand movement is precisely sensed and transmitted to the remote location, where the remote surgical unit mimics it. The surgeon’s operation is virtually superimposed and moves as one rigid entity. In its infancy, it has two significant technical problems to be solved. One is time lag between input and feedback mostly caused by image compression and decompression on transmission network. The other is the deviation and misalignment of remote surgical unit’s movement, which makes unity of master and slave robot. These technologically challenging problems will be solved near future. For public acknowledgement on telesurgery has another dimension of problem - the trustfulness or authority of telerobot as a substitute surgeon and telepresence. It means that how patient can believe the presence of surgeon beyond surgical room and take in robot surgeon as a prosthetic extension of surgeon. Can we make patients overcome the fear of distance—the doubt on telepresence and believe that they really encounter with doctors or robot arms themselves are doctors?

Telesurgical robot and invisible human surgeon

In the film “Kagemusha : The Shadow Warrior”, a thief is decided as a kagemusha of Shingen Takeda, one of three warloads in the 16th century of Japan, just because of the similar appearance. After the assassination of Shingen, the thief is forced to pretend as a real Shingen to hoodwink all inner and outer enemies during the interregnum. Despite of pseudo Shingen’s continuous self-denial and inner conflict, finally he becomes more than pseudo Shingen.

In Buddhism, the self is just an illusion and there is no real entity of self. Only the mind defies our logic, the very notion of natural truth. There is no real Shingen. Only what acts like Shingen plays Shingen. The posthuman view assumes the body as the original prosthesis to manipulate, so that extending or replacing the body with other prosthesis becomes a continuation of a process and can be seamlessly articulated with intelligent machines. The post human subject is an amalgam, a collection of heterogeneous components, a material-informational entity whose boundaries undergo continuous construction and reconstruction. Thus information loses its body and travels to find other entity to be embedded. Human beings desire to expand own territory.

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14 Hayles K. “How we become posthuman : Virtual bodies in Cybernetics, Literature, and Informatics” The University of Chicago Press p.2-4
People have enhanced technology to extend or overcome their physical limit in time and space, designing prosthetic devices. In ubiquitous computing age with the articulate technology in machine and omnipresent network we seems on the take-off stage of feasibility. Considering telesurgery as a prosthetic extension of surgeon or transparent mediation, telerobot which virtually shares physical intimacy with a patient really matters. Telerobotics is 'a form of teleoperation in which a human operator acts as a supervisor intermittently communicating to a computer about goals, constrains, plans, contingencies, assumptions, suggestion and orders relative to a limited task, getting back information about accomplishments, difficulties, concerns and, as requested, raw sensory data-while subordinate telerobot executes the task based on information receives from the human operator plus its own artificial sensing and intelligence'. Catherine Wilson suggested explicit characterization on experience/agency and perception by the criteria of mediation and verifiability. (Table 1) Borrowing her opinion to our perception on telesurgical robot, it is categorized into mediated/ veridical one. A patient can experience or take surgery from human surgeon remotely located and invisible directly. The whole experience is transmitted through network and mediated by telerobot, a pseudo surgeon who gives real sense of surgery. In this aspect telesurgery goes to same category of mediated surgery but as to the matter of authenticity of telepresence, telesurgery belongs to real while psychic surgery becomes just a telefictive experience. In telesurgery surgeon's dexterity is digitized and separated from his body and transmitted to a remote place where it finds new body and acts on a patient just like the surgeon himself.

**Transparent mediation**

Telepresence means presence at a distance thus it can define in the relationship between the medium and the physical world different from that of virtual reality. Telepresent subject can be taken to other remote environment via a medium where it is reconstructed into pseudo-self not simulacrum. Telepresence provides the ability to manipulate physical reality in real time through its embodiment. The body of the teleoperator - more precisely the authority and work of teleoperator – is transmitted to another location where it can act on the subject's behalf. In technological attempt, it is not fake or illusion but reality. Beyond a surgical room, somewhere at the end of the network, a surgeon presents. Telepresence always accompanies visual representation and empirical mediation through transparent interface, to make hallucination of presence. People just want to see even though they already knew the

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15  Kurosawa A. "Kagemusha" 1980 Kurosawa Production  
18  Manovich L. "The Language of New Media" 1995 p. 165  
19  "Robot in the Garden" p. 175
presence and they perceived what they see now is not the real one. They want images by which they can be deluded thoroughly. With this belief system, in religions, images and puppets are created in the institution and endowed with the power to work miracles and magic over great distances. Images allow for interaction with the gods and secure the presence and power for that which is represented. What makes us percept is just the media around us, which are so familiar, articulate and in a sense transparent that we cannot but donate absolute authority on that - it is real. Just as we do not recognize the fact that what we see is mediated by light and what we hear is mediated by air. The medium certainly affects our ability to judge credibility but its role is complex: While greater knowledge of the identity of the outer world seem at first to increase our ability to judge credibility, one may also argues that many of our categorizations derived from physical appearance are misleading and a medium that filters out these cues can in effect increase our knowledge. How transparent the medium should be to make this illusion of real surgeon? Is it the matter of articulation of telerobot or tactile familiarity?

**Post-telesurgeon**

![Diagram of damagochi and cyberdog](<http://www.gildfancy.com/mall/mall-two.html>)<br>![Diagram of damagochi and cyberdog](<http://www.us.aibo.com>)

Figure 5. Two generation of cyber pet

When damagochi first introduced, it was a real sensation. A little electronic signal pet is asking and waiting for owner’s care and affection without which it is supposed to die easily like a real pet. But it could not substitute real pets despite of its crucial advantage of total control of owner. The owner can control even the death and life cycle and totally exempt from ethical blame of animal cruelty. Now we have more improved version of cyber pet, in a sense a cyborg pet. It acts according to owner’s commands and responds like a real puppy. The most significant aspect is that it visually looks much real besides it also has some artificial intelligence. People understand novelty by using analogy. In this way, we make each novelty seem similar to some more ordinary thing. The use of signals, symbols, words and names let our minds transform the strange into commonplace. By constructing physical analogy, people can take novelty of beyond as familiarity. Supposed that telesurgery will be continued on the way of improvement and it absolutely will, the telesurgical system will have more analogy with real surgery in the relationship between human surgeon and telerobot as well as that of a patient and telerobot, as if it were real ones. If the human-machine coupling is tight enough, the interface disappears and namely android hybrid can appear. It will be mighty enough not only to extend human surgeon’s limit in space but also to replace the real surgeon with less possibility of fallacy. This time the god is not the imaginary and therefore absolute and naturalized cultural technology of older religious belief but synthetic technology that humans have loved and set free. Technologies have negated the transcendental God in order to invent the machine-God. Someday this telesurgical robot will be set free from the control of human surgeon and as a cyborg surgeon performs its own miracle, just as devotees of psychic surgery still believe that Holy Spirit will bring about the perfect spiritualization of humanity, the core of the prophecies of Jesus, having seen the evidence.
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