

## Point of View

# Permuting Ethical Principles, Not Just a Combination

The idea (in neuroethics) that evolved from the fine innovations<sup>[1-3]</sup> on operative neurosurgery journal<sup>[3]</sup> and stereotactic laser ablation (SLA) for cerebral cavernous malformation<sup>[1]</sup> is fascinating. That is not flattery because we know flattery dulls intellect. Furthermore, it is in no way promoting unethical innovation by dumping it as just another innovative technology - marriage. The objective of this letter is to permute ethical principles in every article. Three articles were analyzed for ethical principles such as education, balance of obligation, innovation, and middle path.

## INSTRUCTIONAL TOOLS AND EDUCATION

Operative neurosurgery,<sup>[3]</sup> the new journal for example is an innovation in merging new teaching tools (technical partner ONS-beta 2.0) in a more focused part of neurosurgery, i.e., operations. It is an innovation mainly because education (teaching and learning, the two components of education) itself is innovation.

### Neuroethics

Neuroethics has two components: Neurology of ethics and ethics involved in surgical neurology (and neuroscience).<sup>[4]</sup> We will be discussing the latter here.

### Probability

In mathematics, ordering or sequencing or reordering is permutation. It is different from combination, where while selecting order is not given importance.<sup>[5]</sup>

## FIRST A SIMPLE EXAMPLE

The fundamental virtues of any human being are humility, intelligence, benevolent, caring, knowledgeable, objective, brave, and witty.<sup>[6]</sup> Education, physical stamina, personality (maturity), analytical skills, and interpersonal skills are some of the hallmarks of a neurosurgeon.<sup>[7]</sup> However, no single personality describes a neurosurgeon.

The Natural Law Theory comprises aquinas intrinsic goods of God's design, such as life, procreation, social life, knowledge, and rational conduct.<sup>[6]</sup> However, applying one ethical domain or principle in another situation is not possible because of the complex nature of the situation. A simple example of premarital sex is shown in video.<sup>[4]</sup> Another similar simple example of having sex with your wife after completing your procreation goal of say three children contributes not to procreation life in the literal sense. It contributes to social life by strengthening your ties with her and thereby indirectly helping both parents raise children. A permutation would mean the following order: knowledge and wisdom of your culture (even within a culture your family values) first, rational conduct second, social life third, and finally procreation life.

## BALANCE OR JUSTICE

Balance, justice, and middle-path can sometime overlap in their literal sense and look apparently similar in many circumstances.

Contemporary teaching says pure lesionectomy has a lower rate of seizure freedom when compared to topectomy where the entire seizure foci (the lesion and its surrounding seizure-provoking areas) are removed.<sup>[8]</sup> Obviously, if topectomy has to border on eloquent areas, then the risk of neurodeficits will be high.

## BALANCE OF OBLIGATION

However, the author's conclusion is a different level of balance as quoted: "On balance, SLA is a novel and attractive option with preliminary evidence of efficacy against seizures and a potentially acceptable risk profile."<sup>[1]</sup> Balance of obligation is a level above (the cost is not a major issue here): you balance the safety of future patients and society at large versus that of an individual patient at a more fundamental level.

## JUSTICE

The principle of justice is employed when considering societal and personal costs while implementing an innovation.<sup>[9]</sup>

## VARIATION FIRST, NOT INNOVATION

Research, innovation, and variations are apparently similar terms. In reality, it might just be a natural evolution of a particular neurosurgical treatment that is manifesting as an innovation at that instance.

### Quote

"Although the limitations of the cadaver model prevent actual testing of this hypothesis, the current robotic bipolar instrument and newly developed suction/irrigator tool should provide an appropriate solution."<sup>[2]</sup>

That is research trying to test a hypothesis and the outcome will be either you will be able to control bleeding or you will not (null-hypothesis) be. Safety (of that particular risk) has taken a back seat mainly because it is a cadaveric study. Moreover, when you apply that technology to a real-life situation, it becomes innovation.

Since robots are increasingly being used in epilepsy surgery nowadays, the addition of such a technology to SLA will amount to a variation of innovation.

After committing to an expensive neurotechnological innovation in a biopsychosocial context, one cannot apply certain principles as first principles, when it comes to further variations of that technology. For example: "Do no harm" will remain as an assumed principle last, but not the least in the order. As with "always choose low-cost and low-risk."<sup>[10]</sup>

## MIDDLE-PATH AND LEVELS

Applying an ethical concept for a change implemented at a mega (Neurosurgery Departments across a country) level will involve a different attitude. This will be different for a university or neurosurgeon level. For example, applying keyhole concept in neurosurgery will involve the

“middle path.” This is where philosophers, politicians, and managements get involved in decision-making. Here, we objectively analyze both science and ethics and make an adequate judgment.<sup>[11]</sup>

To conclude, most articles clearly identify the latest ethical principle that had been applied while conducting the innovation at that university. It will depend on the type of innovation occurring at a particular time and place. More importantly, we need to place some strength (order) in which a bunch of ethical principles is applied in a particular scenario.

## CONCLUSION

Every innovation will provide immense opportunities for a student to analyze the ethical principles involved and arrange them in the order of occurrence. It will depend on the type of innovation occurring at a particular time and place.

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*Chandramouli Balasubramanian, Bhoresh Dhamija,  
Luis Rafael Moscote-Salazar<sup>1</sup>, Amit Agrawal<sup>2</sup>*

Department of Neurosurgery, Birmingham Children’s Hospital, Birmingham, UK, <sup>1</sup>Department of Neurosurgery Critical Care Unit, Clinica Universitaria Puerto Montt, Puerto Montt, Chile, <sup>2</sup>Department of Neurosurgery, Narayana Medical College and Hospital, Nellore, Andhra Pradesh, India

**Address for correspondence:** Dr. Chandramouli Balasubramanian, 1, Mercia Drive, Birmingham, B14 6TW, UK. E-mail: chan.bcm@gmail.com

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