Power of Judgment: The Significance of Kant's Philosophy for the Medical System Today

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The ways of thinking in the manufacturing sciences are increasingly determining the rationality within medicine as a practical or action-based science. This "technological paradigm" infiltrates the field of medicine with the promise of increasing efficiency while simultaneously improving quality at various points in the system. Simple linear causal relationships generally need to be taken into account when manufacturing products. Even complex manufacturing processes can be broken down into the smallest units and, therefore, also be automated. The situation in complex systems such as the human body, however, is completely different. In order for doctors to be able to carry out their actions within this complex system, medicine as a science provides the physician with rules on the means that should be used to decide which remedy should be used, when and how. This judgment of which remedy should be used, when and how, what is known as the indication, is a central medical moment. This requires a power of judgment sharpened by experience. The indication, in turn, essentially determines the course of a disease and thus the quality of the treatment or the quality of result so often referred to these days. (J Surg Ed 76:4–8. © 2018 Association of Program Directors in Surgery. Published by Elsevier Inc. All rights reserved.)

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INTRODUCTION

> "The technological paradigm has become so dominant that it would be difficult to do without its resources and even more difficult to utilize them without being dominated by their internal logic.[1]"

The "technological paradigm" described by Pope Francis and its internal logic are increasingly determining the ways of thinking within the medical system. This "transformation process"[2] can be observed in various places in the medical system. "Taylorism has begun permeating the culture of medicine.[3]" Quality management, quality measurement, increasing efficiency, process optimization, competition, and pay for performance are just a few example of this development. The pay for performance concept is based on assumptions that are rooted in the efficiency logic used for the manufacture of products. There is firstly an assumption that the quality of the outcome of the treatment of sick people is measurable and, therefore, objectifiable, and secondly there is an assumption that the quality of the outcome can be increased through financial gratification. The inconsistent outcomes of empirical tests of pay for performance concepts [4–6] may be due to the fact that the assumptions on which this concept is based cannot simply be transferred to the medical system. It appears to be necessary to present the core of medicine as a science and the location of medicine in the system of the sciences and medical rationales in order to increase immunity against the "technological paradigm."

MEDICINE AS A PRACTICAL OR ACTION-BASED SCIENCE

There is no denying that modern medicine draws on natural sciences and other sciences to create knowledge and successes. Medicine, in other words, makes use of other sciences to meet its objective.[7] Medicine is, therefore, not an applied natural science, instead it has its own internal rationale. This should be differentiated in particular from the rationality and ways of thinking that apply in the case of the manufacture of products. Simple

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linear causal relationships generally need to be taken into account when manufacturing products. Even complex manufacturing processes can be broken down into the smallest units and, therefore, also be automated. The situation in complex systems such as the human body is completely different. Even at a cellular level there are numerous systems that correspond to the logic of "coupled non-linear equations of complex dynamic systems.[8]" Cell bones, organs, and other structures are also systems that cannot be reduced to the logic of linear equations. In addition to this, there is also the complexity of the individual that arises from the person's life history, their current situation, and their perspectives.[9]

Gethmann et al.[10] distinguish between poietic (manufacturing actions) and practical (human-related actions) sciences, and place medicine in the practical sciences. Practical or action-based sciences also include jurisprudence and theology, as they also focus on actions between actors and their subjects. Gethmann et al. refer back to the differentiation of the sciences made by Aristotle.

> *"In his classification of all intellectual disciplines in Book VI of Nicomachean Ethics, Aristotle identified poiesis as the antithesis to practice, with practice being understood in the sense of actions that can be deemed to be moral and poiesis as any type of manufacturing.[11]"*

In a physical experiment, the measurement outcome will always be the same, provided the conditions are the same. When manufacturing products, too, the success or the outcome is identical and predictable in almost all cases when the conditions are the same.

In manufacturing, human action or machines are used to make something which has clear, measurable, and perceivable properties into something else, which also has clear properties. This situation is completely different in the case of the treating of sick people. Categorizable "disease definitions are intellectual constructs" which are subject to constant change and are modified and replaced.[10] The disease appendicitis, for instance, is an intellectual construct of this type, the symptoms and progression of which demonstrate significant differences between individuals but there is still a corresponding morphological correlate. In many cases, there are correlations between the morphological substrate and the progression of the disease. These are not, however, linear causal relationships. Intellectual constructs are, therefore, expedient and helpful but do not allow objectification in the same way as perceivable things.

Of course empirical research and statistical methods can be used to demonstrate the efficacy or the success of diagnostic and therapeutic measures, to check them and to calculate the likelihood of a given event occurring in a specific case. The knowledge obtained in this way is very important for medicine as a science and leads to a readjustment of established and the introduction of new medical measures, in many cases ultimately leading to a well justified rule.

It is, however, not medicine as a science which heals (sanare), but rather the doctor through his actions and his application of the rules. The indication as a process and a medical service is, therefore, a sort of "interface" between medicine and the doctor.

INDICATION

The indication for or against a diagnostic or therapeutic measure essentially determines the progression of a disease and, therefore, the success or what is now often known as the quality of the outcome. The indication as a central medical moment is the end of a thought process that results in a judgment regarding which resources (medical action) should be used, when and how in a specific case in order to restore, not produce, health.[12] The benefit for the sick person should be carefully weighed up against the risks. The very old and proven standard of "primum nil nocere" ("first, do no harm") should also be taken into account in the indication. As one of the four principles - nonmaleficence - this standard can be found in what is probably the most read book on medical ethics.[13]

Medicine as a practical science appears in numerous textbooks and other publications on actions and rules. General knowledge of these rules is, however, not sufficient for a judgment on the use of these rules in a specific and individual case. If this was not the case then anyone who can read the books would be able to make a diagnosis and recommend treatments. The fact that there are current trends in this direction ("Dr. Google") should not be overlooked.

A completely inexperienced doctor who only has knowledge would probably also make the "right" judgment in some situations. He as the doctor with little experience would, however, not be reliable in his judgment, because this judgment would only rarely be correct and appropriate. More than mere knowledge of the rules is needed.[14]

POWER OF JUDGMENT

As well as knowledge of the rules, power of judgment is also needed for a doctor's judgment to be reliable. Immanuel Kant made a statement on this as far back as 1781 in: "Critique of Pure Reason" ***In: Guyer***

P, Wood AW, NewYork, USA: Cambridge University Press; 1998: 268. A134/B173:

> *"A Physician, therefore, a judge, or a statesman, can have many fine pathological, juridical, or political rules in his head, of which he can even be a thorough teacher, and yet can easily stumble in their application, either because he is lacking in natural power of judgment (though not in understanding), and to be sure understands the universal* ***in abstracto*** *but cannot distinguish whether a case* ***in concreto*** *belongs under it, or also because he has not received adequate training for this judgment through examples and actual business. This is also the sole and great utility of examples: that they sharpen the power of judgment."*

"Examples and actual business" is nothing more than experience. Only through experience can the power of judgment be strengthened.

What is "Adequate Training"?

According to Kant, "adequate training" – "examples and actual business" – is meant to sharpen the power of judgment. The text, in its German original, reads: "durch Beispiele [through examples] und [and] wirkliche Geschäfte [actual business]." "Wirkliche Geschäfte" would be translated to "real existing business" or "real business."

Being aware of rules (*in abstracto*) is, in Kant's view, not sufficient. Rather, the question is that in which cases (*in concreto*) these rules have to be applied. Guidelines and, therefore, also the sensible and important findings of evidence based medicine are, in the end, also rules. Computer-supported methods and simulations[15] are definitely appropriate ways to learn rules. However, in our view they cannot replace an "adequate training" to sharpen the power of judgment.

The competency-based education is an established method in the formation of surgeons.[16] The CanMEDS framework names six domains of competency: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice.[16] The list lacks the "power of judgment sharpened by experience." Only through the latter can medical knowledge, which represents the entity of rules, be applied correctly in a given case.

To our mind, the following methods are suitable to put "adequate training" into practice:

(1) Continuity in the supervision of therapies.

(2) Mentors.

In "Improving the working environment for safe surgical care" of "The Royal College of Surgeons of Edingburg",[17] the following recommendations are made.

A: "*Intelligent design of rotas*: Continuity of patient care, safety, and a symbiosis between service and training must be integral to rota design."

B: "*Establish structured senior support*: This can be done by re-establishing the team structure with consultants at the forefront of the delivery of care."

In an overview [18] about the significance of "role models" and "mentorship", the authors present the following result: "There is clear evidence supporting the potential of mentorship as an approach to enhance surgical training and trainee retention." The logic of efficiency [3] and the modularization of therapies resulting from it, as in production processes, which aims at efficiently using time and other resources will contradict such propositions. Wasserman points out: "There is more material to teach to surgical residents, but less time for teaching.[19]"

However, precisely because of reasons related to efficiency (unnecessary use of resources) it would be essential to establish such methods. Due to the fact that the successes of an "adequate training" would only be visible in a few years and because these would not be easily quantifiable,[20] further intense discussion is required on the topic.

DISCUSSION AND CONCLUSION

The "technological paradigm" and, therefore, the logic used in the production of products is increasingly infiltrating all areas of the medical system subtly. The promise of this infiltration is often an increase in efficiency with a simultaneous improvement in quality with the aim of reducing costs. The hopes of the pay for performance concept, the roots and ways of thinking of which can be found in product manufacturing, are, therefore, only met to a limited extent.[21,22] This is because medicine as an action-based science is very different from other sciences in terms of the precision, the guaranteed success, and the opportunities in terms of automation. Evidence of this is provided in the form of the inconsistent results obtained in the various procedures used to evaluate the quality of clinics which show that "different rating organizations have produced completely divergent ratings for the same hospital during the same rating period.[4]" This result is the consequence of the deformation of an action-based science for which there are limits in terms of objectivity.

Consideration of the classification of sciences formulated by Aristotle[23] and Kant's power of judgment are, therefore, more relevant than ever today. Deriving from this, the identity, the core, and the rationale of medicine needs to return to the forefront in medicine because the

indication as a genuine medical task and, therefore, also the power of judgment of the doctor strengthened through experience essentially determine the progression of a disease and, therefore, also the success of the treatment of a sick person.

In hospitals, in particular, other actors and the predefined conditions are of course responsible for the success. The rationality of the continuous increase in efficiency also increasingly appears to determine the conditions in clinics. In many cases, the result is a compression of services,[24] with the resulting consequences for the employees working. "Environmental stressors in the workplace, such as high workload volume, a resource deficit, lack of autonomy and influence, administrative burdens, and a sense of being lost all contribute to rates of burnout across physician groups.[25]" The health and, therefore, also the performance of employees will have an impact on the success of the treatment of sick people.

It would be an illusion to believe that success of medical actions can be achieved through still greater levels of "transparency" [26] of the quality data collected and through a further reshaping of medicine. The opposite is evidently true: in a medical system in which the idea of quality measurement has been lived with corresponding transparency for several years, the performance is viewed critically. [27]

Lisa Rosenbaum said the following: "The key question, then, is less about transparency with regard to quality than it is about what constitutes quality in the first place.[26]"

It is our understanding that quality constitutes the conditions and content of the further training of doctors being designed so that "sufficient examples" are used to obtain the experience necessary to achieve good treatment outcomes. This must include doctors' working conditions. When talk is of an "undiagnosed pandemic of burnout and depression within the surgical community",[25] the situation is not good. The way in which medical actions are carried out of course also determines the success.[28] In the oft-cited work "Surgical skill and complication rates after bariatric surgery" [29] in which the surgical actions of experienced surgeons were evaluated, the authors come to the following conclusion: "To the extent that practicing surgeons are still 'teachable', however, our findings suggest a potential opportunity for improving surgical outcomes." We see this as evidence that peer review proceedings and continuous dialogue at various levels can improve quality.

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