

Complex pelvic problems - a multidisciplinary perspective

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“I think that any system, whatever it might be, is complex by its own nature” as Edgar Morin¹ states in his comments on the modern philosophical concept of “Complex Thinking”.

The Pelvic Floor (PF) as a system doesn't escape this general rule. This is true for every component – urological, gynaecological, colorectal – of the PF and moreover it is true for the whole system.

It is a common experience for clinicians dedicated to PF disorders to deal quite frequently with complex conditions whose actual understanding is extremely limited. As an example we could consider the topic of the use of prosthetic material in pelvic floor reconstructive surgery: in 2008 three literature Reviews have covered this subject^{2,4} all substantially confirming the statement of 2005 IUGA roundtable: “With a few exceptions, the current expansion of graft utilization in pelvic reconstructive surgery is not a product of evidence-based medicine”.

Generally speaking in many cases clinical decision making can't be based on sound scientific evidence but has to rely on unsystematic clinical experience, intuition, and hypothetical pathophysiologic rationale. Faced to the scant quality of the scientific evidence in various field of our discipline the current solution proposed by the scientific community is to improve the evidence through higher qualitative scientific instruments (i.e. randomized studies).

We are in fact in the era of Evidence Based Medicine (EBM). In 1992 the EBM working group stated that “A New paradigm for medical practice is emerging. EBM de-emphasizes intuition, unsystematic clinical experience, and pathophysiologic rationale as sufficient grounds for clinical decision making ...”.⁶ In other words EBM represents a more sophisticated method to investigate the nature and lies on a higher level in an hypothetical scale to assess the quality of scientific method (Fig. 1).

But we have to be stik to the fact that EBM is simply a method, grounded on statistical concepts and strictly dependent from the variables considered.

EBM is not *per se* “the Answer”.

In fact despite this extremely powerful instrument sounded

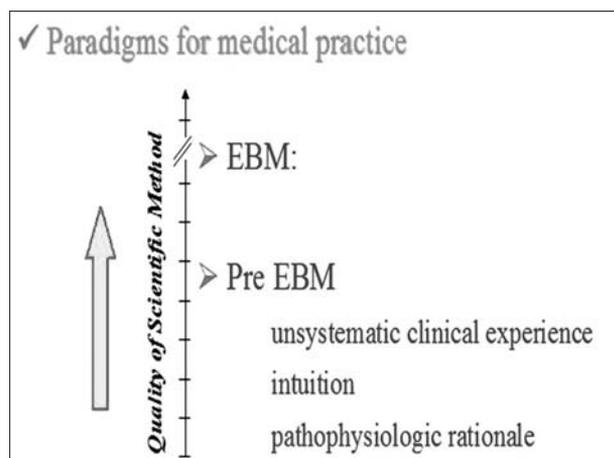


Fig. 1. – Paradigms for medical practice.

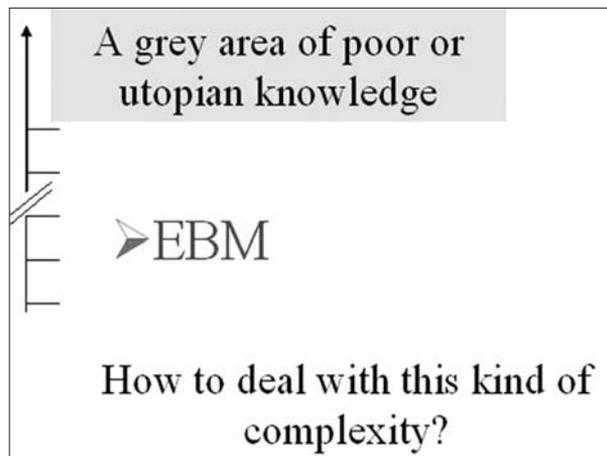


Fig. 2. – The Challenge of Complexity.

evidence is still lacking in many fields of our discipline, and scientific instruments are actually not producing the answers we are waiting for. In other words there is a *grey area* of poor or utopian knowledge that lies between the level of EBM and the “Truth”: this is the challenge of Complexity to the scientific method (Fig. 2).

The epistemology of Complexity is among the main topics of the contemporary philosophical debate and can be identified in all the scientific domains. Especially in physics this has been elucidated more than 50 years ago and traces can be found in the work of Max Born starting in the fifties of the last century.

In medicine, and coming to us, in PF disorders, this concept is apparently ignored.

Edgar Morin, now in his eighties, can be considered one of the most important authors dealing with the philosophical concept of “Complex Thinking”. In Morin's view,¹ the problematic of complexity has been rejected by classical science in virtue of three fundamental explanatory principles:

1. The principle of universal determinism
2. The principle of reduction
3. The principle of disjunction

In particular the last one principle «... consists in isolating and separating cognitive difficulties from one another, leading to the separation between disciplines, which have become hermetic from each other... In this scientific conception, the notion of “complexity” is absolutely rejected. On the one hand, it usually means confusion and uncertainty; the expression “it is complex” in fact expresses the difficulty of giving a definition or explanation. On the other hand, since the truth criterion of classical science is expressed by simple laws and concepts, complexity relates only to appearances that are superficial or illusory. Apparently, phenomena arise in a confused and dubious manner, but the mission of science is to search, behind those appearances, the hidden order that is the authentic reality of the universe».

Then he recognises that “... These principles led to extremely brilliant, important, and positive developments of scientific knowledge up to the point where the limits of

intelligibility which they constituted became more important than their elucidations”.

Here is the point: *where the limits of intelligibility became more important than their elucidations*. This is the grey area that we have described in figure 2 as an area of “*poor or utopian knowledge*”. An area where our actual scientific instruments are not able to give answers.

Currently we are used to think that this *grey area* will be fully covered by improved methodological efforts; is it exclusively a matter of instruments. However this is only partially truth. The limit of the knowledge will certainly move ahead, but it will be never eliminated.

Even rejecting the concept of “*limitation*”, at present, as we have already discussed, our knowledge faces important limitations; happy or not, we actually have to deal with the *grey area*. What to do? Do we need a different approach?

I am wondering whether a new paradigm would be more effective. The concept of “Complex Thinking” is extremely appealing in this view. The “Complex Thinking” paradigm, by definition would not exclude the present scientific instruments; on the contrary it would integrate them in a wider network. Again Morin retakes an expression of Vico as *Scienza Nuova*: “*It is necessary to amplify the idea of scienza nuova by introducing the interaction between the simple and the complex, by conceiving a science that does not suppress disciplines but connects them, and consequently makes them fertile, a science which can at the same time distinguish and connect and where transdisciplinarity is inseparable from complexity*”.

As a classical scientist I am wondering whether philosophical concepts could have something to do with urinary incontinence, pelvic chronic pain or evacuatory difficulties...

Nevertheless I am quite sure that opening a debate with “Complex Thinking” Philosophers could be extremely fruitful for our understanding and could also have an impact on our clinical practice.

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