PUC Minas

pista: periódico interdisciplinar

[sociedade tecnologia ambiente]

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Editorial

Interdisciplinary approach in public health: the complexity dilemma *

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I received the invitation from the chief-editor Wanderley Novato to write this editorial about this new number, in a time that the order (or would it be chaos?) of the social relations of various natures was disturbed by the pandemic caused by the new Coronavirus.

I decided to do a more provocative text, with the objective to stimulate discussions about a controversial theme, less on the human sciences and more intensely on the natural sciences, where the reductionism is still predominant, especially due to its capacity to solve practical social problems (and sometimes create others). I use this opportunity to contextualize the discussion to these singular moments that we are experiencing in consequence of the pandemic.

Adapting to the consequences and a disease unknown by the health professionals and scientists, especially virologists, infectologists and epidemiologists, brings a lot of aprehension. This aprehension does not affect only the authorities on the public power, responsible for the conduction of public politics suitable to this new situation, but also affects in numerous ways the population in general. The general population, main target of convergence of all the protective measures, is feeling lost in the middle of an avalanche of (information that is impossible to digest and transform into practical action against the virus transmission). The only thing that remains is the daily routine of "washing your hands, putting on hand sanitizer and face masks", while in the streets, protected and unprotected citizens walk freely, unknowing of the actual risk they are in.

This lack of knowledge about how serious is the pandemic becomes even greater when epidemiologists and mathematicians show the results of their mathematical and statistics

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simulations on the media. Some people say all the simulations are incorrect, but some are useful, however, the utility of the models depend on a reliable base of empiric data, that allow to more accurate simulate the behaviour of the pandemic. What is left to the mathematicians and statistics is to use official government data, knowingly insufficient.

In an interview, one of these mathematicians tried to explain how his model worked. The model considered only how the mortality numbers, allegedly caused by the COVID-19, were growing. The interviewers were trying their best to appear calm and understanding, but after the professor's answers to their questions, their faces showed that their were not understanding a thing. This lack of comprehension comes from the fact that the interviewers expected a clear and effective answer, a "yes or no" situation. Which means, they were expecting to transmit safe informations to the viewers, so that they feel less concerned in a situation with a lot of uncertainty and fear.

The mathematicians and epidemiologists, however, do their job with the information available, which means they can only give partial answers, that are important nevertheless. Their models need to be simple, otherwise they become inoperable, or completely useless. For example, what would be the behaviour of the pandemic, behond the daily growth in the number of deaths, considering different ages, genders, social classes or religions? The answers to the influence of this differences in the behaviour of the disease would take longer studies, involving different areas. The situation, however, needs fast results, that will be partial, and will not be obtained through this long and elaborated studies, that require a longer time to get to any conclusions that can be safely applied.

Despite the limitations described above, this especific situation looks to me adequate to introduce discussions about the theoretical fundaments of the interdisciplinarity and their practical developments. It is important to remember, however, that the society in general is not interested in details of how the science works, only that it works.

One of the most recognized difficulties, that comes before the theoretical development and consequently the application of interdisciplinarity, is the excessive especialization of the information, the "fractur of the knowledge". In this case, an article published by Maria Cecília de Souza Minayo in 1994 (Saúde e Sociedade 3, 2: 42-64) is a good reference. She discusses whether the interdisciplinarity would be utopic or would actually have some functionality. In her conclusions, Minayo points to the epistemological difficulty in consensual defining interdisciplinarity. If you have numerous definitions for the same concept, you actually don't have any definition. A consensual definition is explicit, and above everything, necessary to

guide not only the theoretical studies, but also the communication and effective practical aplications of these studies.

Another conclusion of the article is that the practical success of the interdisciplinarity depends of professionals capable of dialoguing and interested in doing it. My short personal 4-year experience in gathering weekly with professionals capable and with apparent disposition to dialogue, showed me that sometimes people got a bit nervous and some of my colleagues needed to impose their disciplinary ideas. As a result, in these situations, the dialogue faded away, the meetings were terminated, and each one would return to their disciplinar "hood".

An important aspect that also did not contributed to the evolution of the discussion, was that to all of us, these meetings didn't looked like an serious work, with no actual commitment to present solutions for practical problems. The interdisciplinarity work requires hours and hours of discussion and studies, in order to reach some practical objective.

In a more recent article (Emancipação, Ponta Grossa, 10(2): 435-442, 2010, available in <http://www.revistas2.uepg.br/index.php/emancipacao>), Minayo explains the differences between multidisciplinary and interdisciplinarity. It is based on the directed actions to a common target to solve a complex problem, which needs the combined work of several professionals, as is the case in numerous times in public health. In the case of multidisciplinary, each professional has his own knowledge to solve his part of the problem. Combining the work of all, is expected to reach the best solution to solve the complex problem. In this case, there is no interdisciplinar interations which, in the definition given by Minayo, would mean the articulation of various disciplines whose focus is the object or complex problem, to the resolution of which more than one area of knowledge is needed. Being defined as this, the interdisciplinarity wouldn't differentiate from multidisciplinary: the latter needs equally the articulation and cooperation of various disciplines. Therefore, how could we notice that interdisciplinarity would be more effective than the multidisciplinary to solve practical problems, considering the difficulties mentioned in previous paragraphs of this text?

Continuing this question, Minayo says "the interdisciplinarity must be present in the object's definition, in the discussion of numerous concepts and in the methodological and technical purposes. In that sense, the interdisciplinarity does not *configure a new theory, neither a new method:* it is a *strategy* to the comprehension, interpretation and to explain complex topics". How would this strategy be effective, as is not a new method or theory?

As someone that studies and defends for quite a while the importance of interdisciplinarity, I put myself in the position of the devil's advocate and ask: what are the

advantages of practicing interdisciplinarity? Why it would be more effective to solve practical problems in the collective health area or in another complex area?

Finally, the author deserves credit when, in the last paragraph, she does not hide her own difficulties to successfully accomplish an interdisciplinary work to solve a complex practical problems: “it’s obvious that what I’ve said in this article is in theoretical. I say this, because I can’t actually do what I’m saying with perfection, my work is questionable, and so is every and each one of us will always be. Our knowledge process never ends, not even when we are 60 or 70 years old. If we are not dead, is possible to change, to become more self-organized, to become more complex, and if we are dead, we go back to the nature to increase the complexity of the biosphere, the great living being of the universe”. I agree with Minayo, that it is easier to theorize than to apply the theory that, in this case, don’t look to me like it was the potencial to develop the knowledge, not even as a tool to solve practical problems.

Going back to the COVID-19, I reaffirm that to solve the pandemic, initially we need an effective vaccine, and, being redundant, to adopt more efficient inclusive public practices in areas such as public health, education and economy. Those who live, will see it…