

Looking for fairer societies, can *hard* sciences help?
Comment on “Modeling Human Behavior in Economics
and Social Science” by Marina Dolfín, Leone Leonida
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Scientific community should receive with satisfaction the recent review paper [5], since it provides a deep and clear insight into the important, but most of times misunderstood and desestimated, relationship between the so-called *soft* and *hard* sciences. At the very beginning, sciences were studied as a whole: indeed it is enough to consider many historical examples, like Pitagoras, da Vinci or Galileo, who were dedicated to many areas of knowledge. From the Aristotelian classification of knowledge to the division of Comte with his idea of hierarchy between sciences [6], these have diversified enormously. However, nowadays a major part of the scientific community agrees on the need to return to interdisciplinary.

Among all the topics treated in the review, and coming from a country with a historically precarious economic situation and with a highly unequal distribution of opportunities, I would personally like to comment about wealth distribution in the society. This has been a major problem not only at the global level but also locally in –unfortunately many– countries of the world, since the advent of the *Homo oeconomicus* behaviour. The origin of this problem is a matter of discussion, at the point that soon after the publication of the well known book by Adam Smith about the wealth of nations in 1776 [10], the academy of Dijon offered a prize for anyone being able to give a satisfactory explanation on the said origin [3]. This social inequality can be seen, from the perspective taken in [5], as the emergence of collective behaviors due to individual decision of agents [2, 7].

Some attempts have been made to model this phenomena by the mathematical tools proposed in [5]. For instance, [1] considers a dual interaction between wealth distribution and political opinions. In [8] this approach has been applied to the modeling and understanding of migration phenomena of individuals seeking for better opportunities, confirming the worrying and tremendously prevail-

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ing global situation of people that have to escape from their home countries and trying to make themselves a new life in other places. I have also been involved in [4], that studies the relationship between political elites and technological innovation, while in [9] we discuss some actions, based on optimal control theory, that rulers may take to get fairer societies. Results are convincing, although in many cases they might be validated by empirical data.

Of course, these attempts will be practically useful if the following questions are affirmatively answered:

1- Are researchers from economical or social sciences and mathematicians or physicians willing to work in a sincere interdisciplinary way?

2- Do people in general, but in particular governments and elites, really want to improve the overall situation of their nations?

3- Are governments really interested in the advice of researchers?

These questions could help to develop this line of research in a way in which, hopefully and in the mid-term, societies would be fairer and would enjoy a greater welfare.

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