Scientists design a more efficient democratic voting system

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Spanish researchers at Universidad Carlos III de Madrid (UC3M) have developed a relatively simple democratic voting system which improves the efficiency of the usual common plurality voting system, and that protects minorities better and takes them more into consideration.

The main problem with plurality voting is that by having one vote, voters can only indicate their preferred alternative, without being able to provide more information regarding what they think of the other alternatives. Sometimes this causes people to not vote for their favorite choice because they think they do not have a chance to win, while in other cases, it may occur that when their choice loses, a certain amount of resentment is created by suspicions that the minority losing is more important than the gains of the victorious majority. From the economic theory point of view, these voting results are not efficient in that they do not maximize social well-being. That is what these researchers are trying to avoid in their voting system by standardized bidding, recently published by Robert F. Veszteg, of the UC3M, together with the Universidad Autónoma de Madrid professor, Agnes Pintér, in the academic review, European *Journal of Political Economy*.

The voting system by standardized bidding which they have developed is a method allowing voters to order alternatives according to their preferences, scoring them along a numeric scale. "What is important is that they say a number for each alternative which is higher for their top choice or those for which they wish to assign more importance", stated Professor Róbert F. Veszteg, from the UC3M Economics Department.

He then illustrated this with the following example: If a group of friends wants to decide whether to see a romantic movie, a comedy or a horror film, each one of the friends would have to say three numbers (one for each movie). After that, the numbers could represent the maximum amount of money (in Euros) that he/she would pay to be able to see the film in question, or the personal satisfaction from seeing the movie expressed with the number of doughnuts he/she could buy which would give the same satisfaction.

This liberty can cause two problems, the researchers noted. The first one: How can you add the votes if some are measured in Euros and others are measured in doughnuts? And the second: What do you do with people who are prone to exaggeration and tend to give extremely high numbers? To resolve these issues, the scientists resort to the standardization of these "numbers/votes/bids", a statistical technique which eliminates individual units of measurement and divides by the standard deviation of each bid before adding", Veszteg pointed out. In a nutshell, this would make Tryon Edward's idea a reality. This U.S. theologian, lexographer, and writer said that "Some so speak in exaggerations and superlatives that we need to make a large discount from their statements before we can come at their real meaning. The standardization is what allows these discounts to be accurately calculated.

The researchers' goal in this work to obtain efficiency in common decisions based on voting without the presence of money or monetary transfer, from political elections to a family decision about where to spend an upcoming vacation, to friends choosing a movie, or a group of students trying to agree on a date for a make-up class. "We have aimed for a relatively simple voting system which protects minorities in the aforementioned situations, where this protection is justified from the point of view of the well being of society as a whole", asserts the UC3M Professor. Using the previous example, the objective is to protect the

three friends who really can't bear horror films with respect to the four friends who are horror film buffs, but who don't mind seeing comedies.

The mathematical model which describes this standardized bidding [voting system](#) is highly complicated, for which the researchers opted to use an experimental method to validate their proposal. This experiment was carried out with students, who were invited to a computer room where they had to make decisions in several hypothetical situations, using plurality voting as well as standardized bidding. In this manner, the researchers could contrast their theoretical results and extend them with other empirical data.

Provided by Universidad Carlos III de Madrid

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