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Simple Reasoning Strategies Can Be As Precise As Complex Ones

ScienceDaily (Jan. 26, 2009) — We go into a restaurant with the aim of eating healthily. The menu does not tell us much about fats, salt or additives contained in the dishes. So how do we make the best decision? Psychologists Rocío García-Retamero and Jörg Rieskamp have analysed the influence that inferences about missing information can have on the accuracy of our decisions.

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Rocío García-Retamero, a teacher at the Faculty of Psychology from the University of Granada (Universidad de Granada -UGR), and Jörg Rieskamp, a researcher from the Max Planck Institute for Human Development in Germany, have examined the hit rate of the two types of strategy we usually use to make inferences, depending on the mechanism that is used to treat information that is not available to us.

The strategies are known as the take-the-best (TTB) and weighted additive (WADD) strategies, "two

prototype strategies that represent very well how we as human beings usually behave", García-Retamero explains to SINC.

The first strategy, namely TTB, consists of selecting a route, the one we consider most significant for our objectives. In the restaurant, for example, the cooking method can be useful to enable us to differentiate between a healthy meal and an unhealthy one. Even if this facility does not allow us to discriminate, then we select a second route.

On the other hand, by using the WADD strategy, we consider many more routes and value the importance of each of them more. So, the cooking method together with other properties of the food, such as source and nutrient content, are added to the inference with reasoning.

Ways of inferring

The researchers explain that in the last twenty years studies dealing with the way in which individuals deal with incomplete information have shown that we function very differently, depending on the type of inference problem we are confronting.

The distribution of information that is missing can help us. Returning to the example of the restaurant, we can consider, for example, that that information is the same for all the dishes (uniform distribution) or that, on the other hand, for the less healthy dishes that "hidden" information is greater (conditioned distribution).

Using these criteria, the researchers have designed ten inference problems, that differ in respect to the number of objects considered (between 24 and 181), the quantity of missing information (from 0 to 100%) and the distribution of that information (uniform or conditioned), and they have calculated the hit rate percentage in each case.

The study reveals that the different options of dealing with what we do not know and also the ways in which the "hidden" information is distributed have the same impact upon the two inference strategies. The authors call this a "surprising" result, because a priori we could think that using a compensated strategy such as the weighted additive strategy increases the probability of being right about our inferences.

However, as the psychologist points out, the result "is in line with previous studies about the take-the-best strategy, that show that simple strategies based on a small amount of information can be as precise as those made up of a high number of clues in our environment".



Meal at a fine restaurant. We go into a restaurant with the aim of eating healthily. The menu does not tell us much about fats, salt or additives contained in the dishes. So how do we make the best decision? (Credit: iStockphoto/Zlatko Kostic)

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