Running out of time

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Choosing how much to take and how much to preserve from our environment is a challenging task, and every small decision counts. A behavioural experiment sheds new light on how time pressure negatively affects sustainability decisions.

In the middle of a stressful work day, how often do you take the time to look at the bottom of your takeaway coffee cup to find out whether or not it can be recycled? Probably not all that often — you follow your instinct and throw it in the nearest bin. But once you consider how many cups of coffee you drink in a week, or how quick you are to print documents that you will never read, you may realize that what seems like a small and insignificant decision when time is short can amount to much unsustainable damage over time.

Preserving our planet and ecosystem requires making sustainable decisions, not once but many times in our everyday lives. However, we only have so much time — and so much mental capacity — to dedicate to these decisions. Over the past few decades, economists and psychologists have paid much attention to how our minds process information and arrive at complex decisions, especially when time is short or our cognitive resources are strained. Writing in Nature Sustainability[1], Chris Brozyna and colleagues report on a behavioural experiment that helps us understand why repeated sustainable decisions are so difficult to make in a world constantly pressed for time.

In their contribution, Brozyna et al. study the role of time pressure on decisions about the use of a renewable resource. A laboratory experiment confronted groups of four participants with a dilemma over the extraction of resources, known by economists as a common-pool resource (CPR)[2] game. The group of participants started off with a certain amount of tokens, representing a non-defined renewable resource. In the real world, these tokens could be forest trees or water quantities, for example. Each participant in the experiment could draw tokens. The more tokens participants extracted, the better their immediate payoff. The tokens drawn were converted to real money at the end of the game, ensuring that participants had a real incentive to take their decisions in the experiment seriously. After each round of the game, the pool of tokens would renew, much like when trees regrow. The rate of renewal depended on how much was left, but only up to a point: if depleted beyond a certain threshold, the resource would collapse and the group could no longer harvest it in the future. Therefore, the resource was limited and could only sustain so much extraction by the group. This setup implies that over-extraction by the group is costly for everyone because it decreases earnings in the long run — but individually, each group member is better off if they can extract more, while hoping that everyone else restrains their self-interest. Social scientists refer to this tension between individual and group benefits as a social dilemma.

The innovation in Brozyna and colleagues' experiment was to ask how the cognitive constraints of the human mind affect sustainable decisions. They explore whether group outcomes are more likely to be sustainable when participants are forced to decide quickly, or whether allowing some time for deliberation enables greater sustainability. The results show that, when forced to decide quickly, participants extracted more from the CPR, which resulted in a greater likelihood that the resource collapsed. In other words, time pressure decreased sustainability and led to worse outcomes for groups.

How deliberation and intuition affect our decisions has become central in behavioural economics and psychology research. Nobel Prize laureate Daniel Kahneman describes these factors through a 'dual process' theory of the mind[3]. He distinguishes between System 1 in our mind, which is intuitive and makes decisions quickly and automatically, and System 2, which is slow but deliberative. For instance, when we are faced with familiar or routine decisions, such as forming a quick impression of someone or taking the same commute to work every day, our System 1 is usually at work: we rely on learned or evolved 'heuristics', which help us to navigate our everyday lives more quickly. In contrast, unfamiliar, involved or challenging decisions typically require our System 2, the deliberative mind-set, which is cognitively more taxing and needs more time to arrive at a decision, but allows us to handle complex situations.

The dual-process perspective was first applied to social dilemmas by David Rand and colleagues, who formulated the social heuristics hypothesis[4]. This hypothesis proposes that intuition favours cooperation in single ('one-off ') decisions, when our System 1 has previously learnt that cooperation pays off. To study the effect of intuition, this and other recent work imposes time pressure on participants for them to act quickly.

However, the influence of time pressure on repeated decision-making has received relatively little attention. Still, many of the decisions we face in our lives are re-occurring, and here Brozyna and colleagues break new ground. They demonstrate that the results from experiments studying a single decision cannot be generalized to repeated interactions. When individuals in the CPR are given time to reflect, they make decisions that acknowledge the long-term benefits of sustainability for themselves and everyone else. In contrast, forcing them to act fast in this repeated setting can lead to tunnel vision and immediate self-gratification.

Their findings from repeated interactions might, at first sight, appear contrary to the predictions of the social heuristics hypothesis. A closer look suggests otherwise: making repeated sustainable decisions is a complex task, which most of us have not internalized enough for it to become intuitive. Consequently, recognizing the long-term benefits of cooperation may sometimes require deliberation rather than intuition[5]. Brozyna and colleagues' findings could be seen as a first empirical test of this observation.

Our hope for a sustainable future thus requires that individuals recognize the value of self-constraint today to benefit themselves and others in the future. But cognitive limitations are hard, if not impossible, to change. Future research needs to look for alternative solutions. For instance, when we do not have time to deliberate, we often rely on institutions, public

policies and smart technologies. All these can be designed to take human biases and limitations into account[6] to help make sustainable decisions easier.

References

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