

### *The Gavin C. Reid Prize for the Best Paper by an CBR Early Career Researcher*

Thanks to a generous donation, the CBR has established the Gavin C. Reid Prize for the Best Paper by a CBR Early Career Researcher. The prize is named in honour of Professor Gavin C. Reid, a long-time supporter of the Centre and currently one of its Senior Research Associates. The £400 cash prize, to be awarded annually, is open to early career research staff and research associates of the Centre for Business Research.



*Gavin C Reid, Honorary Professor in Economics & Finance, University of St Andrews; Senior Research Associate, Centre for Business Research, University of Cambridge*

The 2021 Prize is awarded to Tomas Folke for his paper 'Replicating patterns of prospect theory for decision under risk' published in *Nature Human Behaviour*, Volume 4, June 2020, 622-633, <https://doi.org/10.1038/s41562-020-0886-x> (co-authored with Kai Ruggeri et al).



*Tomas Folke, Postdoctoral Researcher, Rutgers University; Research Associate, Centre for Business Research, University of Cambridge*

Gavin writes:

I am delighted to see that the 2021 Gavin C Reid Prize has been awarded to this outstanding contribution by Dr Tomas Folke and his numerous, worldwide collaborators: great praise is due to them all. Dr Folke was awarded a PhD in psychology in Cambridge University, just a few years ago, after which he joined the Centre for Business Research (CBR) under the inspiring leadership of

Professor Simon Deakin, an advocate of interdisciplinary and multidisciplinary methodologies. In the CBR, Dr Folke has had free range to pursue his mission of solving real-world problems within a humanitarian perspective.

In this prize-winning paper, Dr Folke has applied the full force of his high skills in quantitative and qualitative methods to a fastidiously prepared sampling frame, using a well-executed experimental design. The point of departure for this work was the influential paper of 1979 by Daniel Kahneman (winner of the 2002 Nobel Prize in Economics, and author of *Thinking, Fast and Slow*) and Amos Tversky in *Econometrica*: the world-leading journal in economic theory and econometrics. In this journal, Kahneman and Tversky developed an approach to risky decision-making which became known as 'prospect theory'. Among other things, this theory postulated that human decision-makers, acting in a risky world, *dislike losses more than equivalent gains*. As well as expounding their ideas elegantly in theory, they (unusually for that time) tested this theory experimentally. It was well supported.

This work by Kahneman and Tversky has seeded important interdisciplinary work in behavioural economics and has also encouraged the development of experimental economics and neuroeconomics. More widely, it has had impact in diverse areas including corporate finance, international politics and voting behaviour. In this prize paper of Dr Folke and colleagues, now published in the influential research journal *Nature*, they have attempted a direct replication of key items reported in Kahneman and Tversky's foundational article. This was an ambitious and daunting new undertaking, involving over four thousand participants, from nineteen countries, using thirteen languages. In its thoroughness it transcends the design and implementation of the work it mimics. This has been a tough exercise in reproducibility. To the credit of the founding authors of prospect theory, in this new study by Dr Folke and colleagues, a very high proportion of the new analyses and replications undertaken were in concordance with the original work of 1979.

Why is this important? It is important because the body of currently accepted research wisdom needs to be challenged constantly, not written in stone. To be able to conclude on the last page of the paper by Dr Folke and colleagues that the originating work 'still remains a robust and widely applicable descriptive model for decision-making under risk and uncertainty' is both a testament to the solidity of the originators' work, and to the steely resolve with which Dr Folke and his colleagues have undertaken stringent re-testing of these early findings – with much more powerful tools and techniques, and greater resources, than were available over forty years ago. The award of this prize is a fitting recognition of the quality of their paper, which I expect will be very widely read and cited. I hope too that it will be a catalyst for further such exercises in replication, to the benefit of scientific progress, and hopefully to humanitarian causes for which applications of prospect theory are important (e.g., the behaviour of actors in wars, and the causes of conflict).

Tomas writes:

I am honoured and humbled to be the recipient of the Gavin C. Reid prize for my work on the replication of the experimental foundations of Prospect Theory. I am grateful to Professor Simon Deakin for his leadership as well as the other scholars at the CBR who made my last year in Cambridge so fruitful and pleasant. I also want to thank the administrative staff at the centre, especially Stephanie Saunders, whose tireless work enables us scholars to focus on research. *Replicating patterns of prospect theory for decision under risk* was the result of a large international collaboration involving many junior scholars, whose enthusiasm and hard work made the paper possible, I am grateful to all of them. I want to especially thank the inimitable Professor Kai Ruggeri, then at Cambridge, now at Columbia, who led the replication effort and whose endless energy and passion for research continues to inspire me.

I want to share a few words on why I think this paper is important. The paper we replicated, written by Kahneman and Tversky, clearly distinguished between normative and descriptive theories of choice, a distinction which has profoundly impacted on both Psychology and Economics. In plain language, it showed that we need different theories to describe how people should behave and how they actually behave. This might sound trivial today, but at the time it was ground-breaking and motivated the emergence of behavioural economics. The research itself was experimentally ingenious. Kahneman and Tversky set up pairs of binary choices (Choice 1 and Choice 2, each with Option A and Option B) subject to uncertainty, so that a rational agent with self-consistent preferences would respond the same way to both choices. In other words, it does not matter whether you prefer Option A or Option B for Choice 1, but if you do prefer Option A in Choice 1, you should also prefer Option A in Choice 2, and *vice versa*. Kahneman and Tversky showed experimentally that people frequently had inconsistent preferences, violating the normative prescriptions that economists traditionally relied upon to model human behaviour under uncertainty. Crucially, they did not stop at demonstrating this apparent irrationality in the lab, they also provided a new formal theory of choice under uncertainty, Prospect Theory, that could account for their findings.

Despite being ground-breaking when they were conducted, the original Prospect Theory experiments suffered from a few limitations by modern standards. Most importantly, samples were small and not very diverse. Because many other important psychology studies have had well-powered failed replications in recent years, we felt that it was important to evaluate how reliable and general Kahneman's and Tversky's results were. To this end, we collected data from 19 countries from over 4,000 participants, with over 100 participants from each country. Not only did we find that Kahneman's and Tversky's results replicated in aggregate: they replicated in every country we tested. Chile, which had the lowest replication rate of the countries we tested, still showed a significant effect for 77% of the choice pairs. Some countries, including China and Australia, had a replication rate of 100%. The lack of geographical variation in replication rates implies that the choice patterns described by prospect theory apply to a wide range of contemporary cultures. Collectively our results show that the decision-patterns accounted for by Prospect Theory are both reliable and general, which is good news for anyone who wants to think systematically about human decision-making under uncertainty.