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Editorial

Models of Moral Decision Making: Theory and Empirical Applications in Various Domains

Caspar Chorus, Ulf Liebe, Jürgen Meyerhoff

Discrete choice theory provides a mathematically rigorous framework to analyse and predict choice behaviour; since being introduced forty-five years ago, it has enabled sophisticated empirical analysis of decision making in fields as diverse as Transport (Small & Rosen, 1981; Ben-Akiva and Lerman, 1985), Energy & Environment (Carson & Groves, 2007; Mariel et al., 2021), Sociology (Bruch and Feinberg, 2017; Liebe et al., 2021), Health (Lancsar & Louvière, 2008; de Bekker-Grob et al., 2012), Marketing (Kanninen, 2002; Kivetz et al., 2004), and the Political Sciences (Glasgow, 2011; Stubager et al., 2018). Gradually, a field in itself has emerged over the years, with a conference series, textbooks (Train, 2009), handbooks (Hess and Daily, 2014) and a journal devoted to choice modelling. In fact, since the introduction of the Journal of Choice Modelling in 2008 (Hess and Rose, 2013), many of the recently made contributions to the field have been published in its pages, often after having been presented in a session of the International Choice Modelling Conference.

Notwithstanding these great accomplishments, we feel that there is one type of choice behaviour that has not received the attention it deserves, within our field: moral decisions (Chorus 2015). Following the neoclassical school of thought in micro-economics and micro-econometrics, our field's theories and models were originally designed to analyse choices that are *optimal* given one's 'consumer' preferences and budget constraints, rather than choices that are *right*, given one's moral preferences and constraints in the form of social norms and legal regulations. This neglect of the morality of choice is striking, in light of the fact that many of the most important choices people make, have a moral dimension; and also in light of the fact that many fields adjacent to ours, devote considerable attention to aspects of moral decision making, such as:

- Norm formation, moral motives and their effect on behaviour (e.g., Hechter and Opp, 2001; Haidt, 2007);

- Altruistic and pro-social behaviour (e.g., Hitlin and Vaisey, 2013; Simpson and Willer, 2015);
- Anti-social behaviour, deceit, obfuscation, taboos (Tetlock et al., 2000; Chorus et al. 2021);
- Guilt, shame, remorse as determinants of choice behaviour (Krettenauer et al., 2011; Bagozzi et al., 2018);
- Decision-making in moral dilemmas (Greene & Haidt, 2002; Kahane, 2013);
- Moral satisficing and related heuristics (Sunstein, 2005; Gigerenzer, 2010);
- Social Context effects on moral choice behaviour (e.g., Beyer and Liebe, 2015; Bruch and Feinberg, 2017).

The focus of choice modellers on consumer – as opposed to moral – preferences is perfectly understandable when considering that of all adjacent fields, choice modellers tend to feel most strongly connected to the field of Econom(etr)ics and particularly its neo-classical incarnation. While it is good to remember that Adam Smith, one of Economics' founding fathers, wrote extensively about the role of morality (1761), in the second half of the 20th Century morality research started to gradually disappear from the pages of the most reputed Economics journals (of course, with notable exceptions such as recently Elías et al., 2019). And when topics related to morality were covered by leading neo-classical economists, they usually relied on the toolbox developed for fully rational decision making, e.g. analysing violations of the law and acts of altruism using expected utility models (Harsanyi, 1955; Becker, 1968; Becker & Stigler, 1974; Arrow, 2016). Although the distinction between neo-classical and behavioural economics is not always easy to make, the increased attention to human behaviours in the Economics discipline has over the years proved to be a relatively fertile ground for research into moral choice behaviour, as exemplified by high impact contributions on fairness and different forms of altruism (Andreoni, 1989; Kahneman & Knetsch, 1992; Fehr & Schmidt, 1999).

When it comes to moral decision making, and also more generally, we believe it is a good thing that in recent times our field is increasingly looking beyond (neo-classical) Econom(etr)ics for inspiration – see a recent special issue in this journal, devoted to the broadening of the scope of choice modelling (Liebe and Meyerhoff, 2021). As illustrated with the references given above, in fields such as (moral) psychology and (empirical) ethics, moral

decision making has been a topic of heated debate and great scientific activity and progress. With such disciplines, choice modellers can build very fruitful collaborations, by translating their behavioural theories into tractable mathematical (econometric) models and putting them to the empirical test using the rigorous techniques available to us. Since recently, neuroscience has come up as another promising discipline that could help to gain further insights into moral decision making (Greene et al., 2001; FeldmanHal et al., 2012; Hutcherson et al., 2015; Sawe 2017).

Indeed, in recent years choice modellers have been using a variety of models and data-types to study moral decision making in various contexts with a clear moral dimension such as: welcoming (or not) refugees into one's neighbourhood (Liebe et al., 2018), allocating scarce healthcare resources to patients (Koonal et al., 2015), giving to charity (Langen, 2011), contributing to a sustainable energy transition (Ek and Söderholm, 2008) or animal welfare (Reithmayer et al. 2020), participating in environmentally friendly activities (Massarutto et al., 2019) or social routing schemes (van Essen et al., 2020), etc. Inspired by these developments, this special issue aims to help further propel the study of moral decision making in our field by proposing and empirically testing (new) mathematical models that aim to capture human decision-making behaviour in moral choice situations. What better place to publish such a special issue than in the pages of the Journal of Choice Modelling?

The journey of this special issue started with a call for abstracts in the context of the 2019 International Choice Modelling Conference held in Kobe. The result of this call was a double special session on Moral Choice Models (six papers presented in total); besides, several other papers on moral decision making were presented at the conference. After the conference a new call for papers was sent out, aiming for a special issue. Out of six submitted papers, four were selected after a rigorous review process.

They cover a wide range of topics and choice modelling-techniques, each in their own way contributing to our empirical knowledge regarding moral decision making and/or to our understanding of how to model such choices. Hancock et al. (2020) show how quantum choice models – inspired by 'spooky action at a distance' Quantum Theory – can be used to analyse and predict human decision making and changes in perspective in the face of taboo trade-offs (Tetlock et al., 2000; Chorus et al., 2018) and when considering intra-household altruism; this offers a whole new perspective to the modelling of moral choices. Also, Olivier

Chanel and co-authors (2021) study inter-family altruism: their economic models distinguish between different forms of altruism, and using a clever survey design they are able to disentangle which forms are particularly important in the context of air pollution reduction measures. Indeed, health related choice contexts offer fertile ground for the study of moral decision making, as is also shown in the paper by Lu and co-authors (2021), who study funding preferences for the national (collective) healthcare scheme which is one of the United Kingdom's most proud achievements. Their analysis, based on stated choice experiments, suggest clearly that respondents prefer a collective rather than an individualistic approach to raise such funds, and they also have a preference for progressive systems. Such moral sentiments and preferences are also echoed in the study by Smith and co-authors (2021), who use a carefully crafted survey and a variety of choice models to reveal a willingness to pay amongst consumers to improve the rather precarious labour conditions of workers in the so-called 'gig economy'. Before getting too excited about this result, it is good to note that the authors explain that "at the same time […] their willingness to pay would unlikely result in a sustained improvement in working conditions".

Were it not for Covid-19, this special issue would have been published much earlier; we originally aimed for publication in the Summer of 2020. However, when most of us were confronted with lockdowns and other inconveniences (or worse) related to the pandemic, it quickly became clear that the original schedule had to be adjusted to give authors, reviewers and ourselves time to adjust to the new situation, take care of our family and loved ones, and get more urgent work-related tasks done. And with hindsight, we feel that this delay is not necessarily a bad thing: as with all disasters, great and small, the Covid-19 pandemic has reminded us very clearly that moral decisions are a topic of great societal relevance: from the hoarding of toilet paper, the flouting of social distancing rules to heroic acts of care and courage in hospitals and care homes, and the necessity to allocate scarce resources involving even the nightmare of triage at the gates of ICUs. Morality is simply everywhere, these days and papers using choice models to describe (or: make sense of?) our behaviours under Covid-19 conditions are already starting to find their way into the archives of academia (Jonker et al., 2020; Chorus et al. 2020; Genie et al. 2020; Reed et al., 2020).

We hope that this special issue helps encourage the choice modelling community to increasingly devote attention to moral decision making and to maintain a cross-disciplinary view that takes on board progress in fields as diverse as (experimental) ethics and moral

psychology, in addition to insights from the economics discipline. Moral decision making is a worthy topic indeed, and one which is likely to become even more relevant in years to come, as moral choice models are becoming an obvious candidate to equip artificial agents with a human-inspired moral compass (Noothigattu et al., 2018; Feier et al. 2021; Martinho et al., 2021).

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