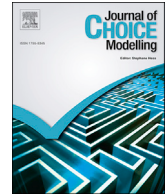


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Taboo trade-off aversion: A discrete choice model and empirical analysis

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ABSTRACT

An influential body of literature in moral psychology suggests that decision makers consider trade-offs morally problematic, or taboo, when the attributes traded off against each other belong to different 'spheres', such as friendship versus market transactions. This study is the first to model and empirically explore taboo trade-off aversion in a discrete choice context. To capture possible taboo trade-off aversion, we propose to extend the conventional linear in parameters logit model by including penalties for taboo trade-offs. Using this model, we then explore the presence (and size) of taboo trade-off aversion in a data set specifically collected for this purpose. Results, based on estimation of a variety of (Mixed) Logit models with and without taboo trade-off penalties, suggest that there is indeed a significant and sizeable taboo trade-off aversion underlying choice behaviour of respondents.

1. Introduction

Ever since the notion of taboo trade-off aversion was systematically explored by moral psychologists, most notably Philip Tetlock and co-workers (e.g., [Fiske and Tetlock, 1997](#)), it has received ample attention throughout the behavioural sciences. The idea of taboo trade-off aversion (from here on TTOA) suggests that decision makers consider some types of trade-offs morally problematic, or taboo. Indeed, much empirical evidence (see below for a brief review of key contributions to this literature) has surfaced to suggest that there are many situations where decision makers dislike making a trade-off between different attributes of choice alternatives, and may even become distressed (express moral outrage) when asked to consider such trade-offs in the first place. Generally, trade-offs are found to be considered taboo by decision makers when the two attributes being traded off against one another belong to different 'spheres'; usually one attribute belongs to the sphere of market transactions (e.g. a price attribute), while another attribute belongs to, for example, the sphere of social relations (e.g. friendship) or another sphere in which market transactions are, by many, frowned upon (e.g. healthcare, or matters of war and peace). To illustrate the concept of taboo trade-off aversion, and before we discuss notable contributions to the taboo trade off literature, we here present two brief examples.

Imagine that you plan to visit your friend, who lives 30 min away and that you have a value of time of 20 euro per hour. This implies a) that you are willing to sacrifice an hour of traveling (to your friend's home and back) to visit your friend, and b) that you would be willing to pay 20 euro to eliminate the hour of traveling to your friend's home and back. Now, consider how would you react if your friend offered you the following proposition: "don't come, but pay me 20 euro instead and I will come to your place"? It is safe to expect that most people will not like this proposition; many would even feel offended. However, transitivity laws would suggest that a rational individual would at least consider this trade-off between money and travel time. So why might this proposition feel so awkward to many of us? Taboo trade-off theory ([Fiske and Tetlock, 1997](#)) suggests an answer: the awkwardness stems from the interference of two spheres

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– monetary transactions and friendship – which most people believe should be firmly separated. We are fine with “paying attention” to a friend, but not with paying her money in exchange for an update on how she is doing.

The second example is inspired by a thought experiment of [Harel and Porat \(2011\)](#). Consider a government that is willing to pay two million euro per human life saved, for example, when considering how much money to spend on dike improvements which aim to protect people from floods. Now assume that the same government agrees that it is acceptable to torture a suspected terrorist if this will save a human life. Does this imply that the same government should be willing to torture a suspected terrorist in order to save two million euro worth of property damage? Again, although laws of transitivity suggest “yes”, most people, and governments, would agree that this would be morally highly problematic. The reason behind this seeming inconsistency again is that elements from different spheres are compared (dignity of a human life versus money), which many people believe to be ‘incomparable’ or incommensurable. In contrast, the government’s acceptance of torturing a terrorist to save life involves a trade-off between two elements within the same sphere (dignity of a human life versus saving a human life), which leads to what psychologists have termed a ‘tragic’ – but not a ‘taboo’ – trade-off. If both attributes belong to the secular sphere, then the trade-off is called a ‘secular’ trade-off or a ‘routine’ trade-off.

The literature on taboo trade-offs is sprawling; given word constraints and in light of the fact that there are recent review papers available on moral decision rules, including taboo trade-offs ([Chorus, 2015](#)), we here limit ourselves to a brief discussion of some seminal and some very recent contributions. [Tetlock et al. \(2000\)](#) presented participants with a variety of secular, tragic, and taboo trade-offs, and found that even the mere act of reading about taboo trade-offs (e.g., the buying of U.S. citizenship) led participants to respond with *moral outrage* (as measured by means of a series of answers to propositions) and with so-called *moral cleansing* (as measured by a participant’s stated inclination to volunteer for a good cause). Despite this seemingly strong aversion to taboo trade-offs, [Tetlock \(2003\)](#) found that a simple rhetorical reframing of the trade-off could strongly reduce levels of moral outrage and moral cleansing. To cite one example from that paper, the author reports a survey held in the fictionalized context of the government deciding to allocate less tax money than originally planned to the cleaning up of a hazardous waste site. This proposition was estimated to lead to a reduction in ‘saved lives’ from 400 to 200, and the freed up money (100 million USD) would be used to reduce the deficit and to decrease taxes. Depending on how the question was framed, between 35% and 72% of respondents agreed with the policy. Cheap talk statements such as that the government “concludes that morally this is the right thing to do” had great positive effect on support levels. These insights are confirmed in a consumer choice context by [McGraw and Tetlock \(2005\)](#), who confronted participants to a fictional situation where someone (‘John’) was selling a ballpoint pen which he had received in the context of a particular relationship. Depending on how this relationship was framed, participants reported lower or higher levels of ‘distress’ when confronted with John’s intention of selling of the pen; highest distress levels were reported for the frame that emphasized that John had received the pen as a token of gratitude for having helped a fellow graduate student. This frame also led to a relatively high percentage of respondents who refused to state what would be an appropriate buying price for the pen. This experiment clearly indicates that market transactions involving relational aspects are considered taboo by many. In the rather different context of ecosystem protection, [Daw et al. \(2015\)](#) find that taboo trade-offs – in this case, between the well-being of marginalized women in a remote Kenyan village and profits from fishery and trade – can be resolved by either making the taboo-aspect explicit, or by reframing them into routine or tragic trade-offs. The importance of rhetorical re-framing of taboo trade-offs is also confirmed by [Zaal et al. \(2014\)](#), in the context of public opposition against the siting of hazardous facilities. The authors find that participants react very negatively to an offered monetary compensation for accepting the safety risks associated with a hazardous facility being sited in their neighbourhood (implying a taboo trade-off between money and safety). However, when the offer is rhetorically redefined into a tragic trade-off between two forms of safety (in this case, by highlighting that the compensation could be used by the community to improve local traffic safety), this led to much higher levels of acceptance. [Stikvoort et al. \(2016\)](#) report that participants to an experiment which involves making taboo trade-offs regarding eco-system preservation (i.e., making a donation to help preserve a forest, or spending the money on designer furniture) made higher real donations to an environmental cause *ex post*, than respondents to the control condition which did not involve taboo trade-offs. The authors interpret this as a confirmation of the ‘moral cleansing’ effect predicted by earlier studies (see above).

This brief review of the empirical literature on taboo trade-offs suggests a consistent picture: trade-offs between ‘sacred’ and ‘secular’ values are considered problematic by many. When confronted with such trade-offs, people express moral outrage or distress and they react by means of acts of moral cleansing. However, simple rhetorical reframing can substantially reduce or even eliminate these negative reactions.

Given the substantial interest in the concept of taboo trade-offs in moral psychology and in different fields of application, it is somewhat surprising to see that – to the best of our knowledge – no attempt has been made to formalize the notion of taboo trade-off aversion (TTOA) in a discrete choice context. Such a formalization would open the door towards a rigorous econometric analysis of TTOA using data obtained from real life or stated choice (SC) experiments. Such formalization and empirical investigation (using SC-data) of TTOA is the aim of this paper, and constitutes the paper’s main contribution to the moral psychology and choice modelling literature. Another contribution of the paper lies in the introduction of the TTOA-concept to the choice modelling community.¹

In sum, this paper contributes to the choice modelling literature by introducing and operationalizing the notion of taboo trade-off

¹ Indeed, the notion of TTOA has not caught on in the economic sciences, including the choice modelling community. Inspired by seminal work in consumer theory and decision making (e.g., [Lancaster, 1966](#); [Keeney and Raiffa, 1976](#)), discrete choice theory has traditionally been based on models of choice behaviour that presuppose that any attribute can in principle be traded off against any other attribute. This holds for conventional, linear in parameters utility maximization models (see for an introduction [Ben-Akiva and Lerman, 1985](#); [Train, 2009](#); [Hensher et al., 2015](#)), as well as for more recent attempts to incorporate semi-compensatory decision making in choice models like regret aversion, loss aversion, or contextual concavity models (see for an overview [Leong and Hensher, 2012](#); [Chorus, 2014](#)). Lexicographic models ([Sælensminde, 2006](#)), in contrast, assume a general rejection of trade-offs. However, those models do not differentiate between taboo trade-offs and other trade-offs, and are therefore not well suited to study taboo trade-off aversion.

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