

Choice Blindness

During the course of a normal day humans make countless choices: some slow and deliberate, some rapid and intuitive, some that carry only minor significance, and some that impact greatly on our lives. But for all the intimate familiarity we have with decision making, it is extremely difficult to probe the representations underlying this process, or to determine what we can know about them from the ‘inside’, by reflection and introspection (Nisbett & Wilson 1977, Jack & Roepstorff 2004). A striking problem for researchers interested in experimental investigations of volition and choice is that they cannot take the reports of the participants involved at face value when it is the very terms used in these reports that they want to study (i.e. what participants claim to ‘intend’ and ‘decide’, what their purported ‘reasons’ are, etc.). At the same time, self-reports about choice is an indispensable foundation for academic research in the humanities and social sciences.

We have found a way to break this deadlock. Using the phenomenon of *Choice Blindness* (CB) as a wedge, we are able to ‘get between’ the decisions of the participants and the outcomes they are presented with, which has allowed us to demonstrate that participants often fail to notice glaring mismatches between their intentions and outcomes, while nevertheless being prepared to offer introspectively derived reasons for why they chose the way they did (Johansson, Hall, Sikström and Olsson (2005, see Fig 1).

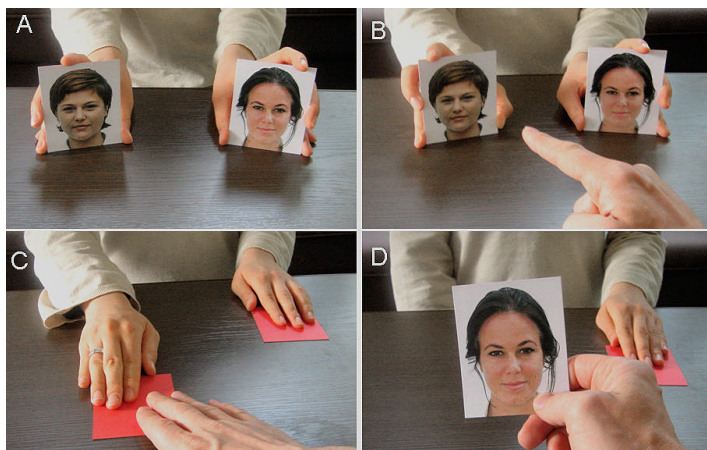


Fig.1. A snapshot sequence of the choice procedure during a manipulation trial. (A) Participants are shown two pictures of female faces and asked to choose which one they find most attractive. Unknown to the participants, a second card depicting the opposite face is concealed behind the visible alternatives. (B) Participants indicate their choice by pointing at the face they prefer the most. (C) The experimenter flips down the pictures and slides the hidden picture over to the participants, covering the previously shown picture with the sleeve of his moving arm. (D) Participants pick up the picture and are immediately asked to explain why they chose the way they did. An accessible and informative video demonstration of the experimental procedure, taken from the BBC-Horizon documentary “How to Make Better Decisions”, which premiered in Jan 2008: <http://www.youtube.com/watch?v=wRqywEwgTk&feature=related>

In Johansson et al. (2005), we analysed the reports given in manipulated and non-manipulated trials, and compared the two classes of reports on a number of different dimensions, such as the level of emotionality, specificity and certainty expressed, but no substantial differences between manipulated and non-manipulated reports were found. The experiment also established the extent to which a report could be matched to the picture originally chosen or to the manipulated outcome received – i.e. if the participants talked about the face they thought more attractive first or the one they ended up with after the switch was performed. The analysis of the verbal reports showed that the participants often confabulated their answers in line with the manipulations made.

In Johansson et al (2006) we extended this methodology to include two additional forms of contrastive analysis: relative word frequency and latent semantic analysis (LSA). Again, very few differences could be found between cases where participants talked about a choice they actually made, and those trials where the outcome had been reversed. Thus, the lack of differentiation between the manipulated and non-manipulated reports could be seen to cast

doubt on the origin of the non-manipulated reports as well; confabulation could be seen to be the norm and truthful reporting something that needs to be argued for.

CB is a robust, replicable, and often dramatic effect. We have demonstrated it for attractiveness of abstract artistic patterns and for male and female faces, both when the alternatives are presented on a computer screen (Johansson, Hall & Sikström, 2008), when presented 'by hand' (as described above) and when the presentation and manipulation is performed by a virtual agent in a flash animation (Johansson, Hall, Gulz, Haake, & Watanabe, 2007). In addition, we have shown that mismatched outcomes can induce a pronounced preference change, as the participants come to prefer the originally non-preferred face in subsequent choices (Johansson, Hall, Tärning, Sikström & Chater, submitted; Johansson, Hall & Chater, 2011).

CB has also been demonstrated in different modalities. Steinfeldt-Kristensen and Thornton (2010) have established CB for tactile choices, and we have extended CB to the linguistic domain for purely spoken decisions (what we called *voice blindness*, Lind, Hall, Johansson, Breidegard & Balkenius, submitted). We have also demonstrated the effect of CB for the taste of jam and the smell of tea in an ecologically valid supermarket setting, an unsettling result for the food industry, which is critically dependent on product discrimination and preference studies to further the trade (Hall, Johansson, Tärning, Sikström & Deutgen, 2010). Furthermore, CB can be found for choices between monetary gambles, where we again have found substantial preference change (Kusev, Johansson, Hall, Ayton, van Schaik & Chater, in prep) for online consumer choices in a mock-up Amazon environment (Johansson, Hall, Kusev, Kalliopi, Androvandi & Chater, in prep), and even for moral judgments involving hotly debated topics in the current political debate (Hall, Johansson & Strandberg, 2012). And perhaps most strikingly, we have established that CB could strongly influence voting intentions just a week before the 2010 national Swedish election (Hall, Strandberg, Lind, Tärning & Pärnamets & Johansson, 2013).

Recently, CB has also been extended to the clinical domain. Merkelbach, Jelicic and Pieters (2010) showed the relevance of CB as a tool to study the problem of malingering in the clinical domain, and most recently we have established that CB has clinical relevance as a diagnostic instrument to study Obsessive-Compulsive Disorder (OCD) (Aardema, Hall, Johansson, Paradisis, & Roberts, S, submitted), and that CB can be harnessed in a positive direction to induce preference change for a more healthy body ideal in subclinical sample of participants with self-rated body concerns (Hall, Pärnamets, Johansson, Carlsson, & Strandberg, in prep).

It is a deceptively simple idea, to covertly generate discrepancies between intentions and outcomes, and measure the extent to which participants notice and introspect on this, and whether this feeds back and influence subsequent behaviour. But the power of CB to leak across interdisciplinary boundaries is substantial, and it is now firmly established as an independent research paradigm.

If you would like to know more about current directions of research at the Choice Blindness Lab or are interested in collaborating with us, please see our lab-page: <http://www.lucs.lu.se/choice-blindness-group/> or contact Petter Johansson (petter.johansson@lucs.lu.se) or Lars Hall (lars.hall@lucs.lu.se).

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