Time Units and Patience

Rafay A. Siddiqui, Hong Kong Polytechnic University, Hong Kong
Ashwani Monga, Rutgers University, USA
Eva Buechel, University of South Carolina, USA

In intertemporal choices between smaller-sooner (SS) and larger-later (LL) rewards, we investigate an interactive effect of wait time units (large vs. small) and reward type (hedonic vs. utilitarian) on patience for LL. We show that using larger wait time units boosts patience, but only for hedonic (and not utilitarian) rewards.

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EXTENDED ABSTRACT

Consider a consumer in the market for an iPad, who could purchase the current generation iPad (SS) or wait for the next generation version that is better, but available later in time (LL). In the current work, we show that patience may increase when wait time for LL is expressed using larger units of time. Importantly, we argue that this only occurs when the rewards are hedonic in nature, and not when they are utilitarian.

Theoretical Development

Patience in intertemporal choices may be affected by wait time perception (Kim, Zauberman and Bettman 2012), as well as the nature of the rewards (Thaler 1981). We demonstrate a novel interactive effect of wait time and rewards. Specifically, we show that the units used to describe wait time (e.g., days vs. months) influence wait time perception, and consequently patience, but this is contingent on whether the rewards are hedonic or utilitarian. Our prediction for this interactive effect is based on past work on the numerosity heuristic and the hedonic vs. utilitarian distinction in consumer products.

People have a tendency to equate smaller numbers with smaller magnitudes, an effect known as the numerosity heuristic (Pelham, Sumarta and Myaskovsky 1994). For example, 10,000 Korean Won appear to be greater than 1,000 Japanese Yen, even though both are of equal value (Raghubir and Srivastava 2002). Thus, if the wait time for LL is expressed as 3 months instead of 90 days, people should perceive it to be shorter and, consequently, become more patient. The reason for this is that the larger unit of months results in a smaller number being used to express the wait time (i.e., ‘3’ rather than ‘90’). However, since numerosity is an effortless heuristic, it should impact intertemporal choice more when decision makers are relying less on careful calculation. We believe one such situation is when individuals evaluate hedonic rather than utilitarian rewards. Given that the primary purpose of hedonic consumption is pleasure rather than practicality (Khan et al. 2005; Pham 1998), hedonic consumption is associated less with careful thinking and more with reliance on feelings. The influence of the numerosity heuristic in intertemporal choice should thus be stronger in the case of hedonic rewards. Hence, we predict that larger time units should lead to shorter wait time perception and, consequently, higher patience, but that this should only be the case when the rewards are hedonic rather than utilitarian.

We observe support for our prediction in six studies, four of which provide process evidence. Studies 3 to 6 show that the interactive effect of time unit and reward type on patience is mediated by the perceived length of the wait time. Studies 5 and 6 demonstrate that this interactive effect attenuates when participants engage in careful calculation.

Studies

In study 1, participants made a hypothetical choice between the current version of a computer tablet versus an upcoming version. The tablet was manipulated to be either hedonic or utilitarian and the wait time for the upcoming version was expressed as 120 days vs. 4 months. Participants were more patient for the new version when wait time was expressed in months rather than days, but only when the tablet was hedonic (not when it was utilitarian).

In study 2, participants were first manipulated to think of money as a means to buy something hedonic versus utilitarian. Then they were offered either a small monetary reward that they could receive immediately or a larger monetary reward that they could receive later. The wait time for the larger reward was expressed as 4 days vs. 96 hours. Participants waited for the larger amount more when wait time was expressed in days rather than hours, but only when they thought of money as a means to buy something hedonic (not utilitarian).

In study 3, participants imagined receiving a $100 visa gift card and were asked to think about what they will spend it on. They were then informed that they could receive a $110 gift card instead if they were to wait. Wait time was expressed as 14 days vs. 2 weeks. Participants preferred to wait more when wait time was expressed in weeks rather than days, but only when they thought about buying hedonic (not utilitarian) products with the gift card. Participants’ wait time perception mediated the effect of units and reward type on patience.

In study 4, participants imagined buying headphones online, which were manipulated to be either hedonic or utilitarian. They chose between standard and expedited shipping, with shipping times expressed in hours vs. days. For hedonic (but not utilitarian) headphones, participants chose standard shipping more, and thus reflected more patience, when shipping times were in days rather than hours. Participants’ wait time perception mediated the effect of units and reward type on patience.

In study 5, participants were first manipulated to think of money as a means to buy something hedonic versus utilitarian. They then indicated preference between a $100 gift card in 2 weeks (vs. 14 days) versus a $120 gift card in 8 weeks (vs. 56 days), and completed the lay rationalism scale (Hsee et al. 2015) as a measure of their natural inclination towards relying more on calculation. Results from earlier studies replicated, but only for participants who were relatively low on the lay rationalism scale.

In study 6, in a control condition, participants completed the same procedure as in study 4. In a calculation prime condition, participants first solved a few mathematical problems that would encourage careful calculation rather than the use of heuristics. Results from study 4 replicated in the control condition, but in the calculation prime condition no significant effects were observed even when the rewards were hedonic.

Discussion

We show that using larger units to express wait time can boost patience, but only when the rewards are hedonic and not when they are utilitarian. Reliance on careful calculation attenuates the effect even for hedonic rewards. These results reveal a novel interactive effect between the nature of the rewards and wait time perception in intertemporal choice.

REFERENCES


