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When Scarcity Mind-Set Promotes Prosocial Behaviours: a Waste Reduction

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Scarcity has been found to increase self-interestedness and decrease prosocial propensity. In contrast, the current research demonstrates that inducing scarcity mind-set makes people be more concerned about waste reduction and when a waste concern is present, people under a scarcity mind-set tend to make prosocial decisions to avoid waste.

[to cite]:

Xue Wang, Xianchi Dai, and Kao Si (2019) ,"When Scarcity Mind-Set Promotes Prosocial Behaviours: a Waste Reduction", in NA - Advances in Consumer Research Volume 47, eds. Rajesh Bagchi, Lauren Block, and Leonard Lee, Duluth, MN : Association for Consumer Research, Pages: 903-904.

[url]:

<http://www.acrwebsite.org/volumes/2551221/volumes/v47/NA-47>

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EXTENDED ABSTRACT

Experiences of scarcity are ubiquitous and have profound influences on consumers (Hamilton, Mittal, Shah, Thompson, and Griskevicius 2018). When consumers experience shortages of resources relative to their needs, they draw attention to the limited resources, focus on self and reduce spending resources on others. Therefore, scarcity disposes consumers towards selfish acquisitions of resources and decreases their prosocial tendency (Holland, Silva, and Mace 2012; Petersen, Aarøe, Jensen, and Curry 2014; Roux, Goldsmith, and Bonezzi 2015).

The current research reexamines the relationship between scarcity and prosociality. We contend that the motivation to conserve resources is an important psychological reality that accompanies scarcity (Haushofer and Fehr 2014; Shah, Shafir, and Mullainathan 2015). When a waste concern is present, the increased waste reduction motivation might override the self-interest motivation and lead consumers to conserve resources even when doing so benefits others at a cost of self, a tendency that manifests .

We further propose the type of cost (i.e., money versus time) to be a moderator. Monetary cost is generally more countable and construed more concretely than temporal cost (Macdonnell and White, 2015; Okada and Hoch 2004). Besides, money is the major and primary resource to cope with scarcity because it can exchange for many other types of resources. Thus, consumers with scarcity mind-set might be more sensitive to monetary cost than to temporal cost. Consequently, scarcity mind-set might promote altruistic behavior when it takes time to reduce waste, but less so (or even reversed) when it takes money.

Seven studies examine the hypotheses. Before the focal studies, we tested the association between scarcity and waste reduction motivation by the World Values Survey (WVS; Inglehart et al. 2014) and found that relative income negatively predicted intentions of saving resources, $b = -.02$, $p = .001$, 95%CI = (-.0341, -.0094), suggesting a positive relation between scarcity and intentions of saving resources.

Studies 1 to 3 tested whether activating scarcity mind-set would increase the motivation to reduce waste and protect resources. Study 1 manipulated scarcity mind-set by asking participants to recall a personal experience that they did not have enough resources (Roux et al. 2015), which was also used in the following Studies 2 to 5. Afterwards, participants joined a taste-drink task and received two cups of lemon tea, one was large (470 ml.) and one was medium (320 ml.). Participants only chose one cup to drink and could not take away the leftover tea. Supporting the hypothesis, the proportion of choosing the large cup in the scarcity condition (31.11%) was significantly lower than that in the control condition (60.42%), $\chi^2(1) = 8.02$, $p = .005$. Participants in Study 2 first finished the scarcity manipulation. Then they read a scenario in which they could receive a free but redundant shopping bag from a supermarket. Activating a scarcity mind-set significantly decreased participants' tendency to take the free bag, $t(104) = -2.11$, $p = .014$, $d = 0.49$.

Study 3 adopted a 2 (mind-set: scarcity or control) \times 2 (charity causes: reduce waste or promote healthy habits) between-participants design. After finishing the scarcity manipulation, participants read that a charity organization is recruiting volunteers to distribute flyers that remind people to reduce waste or to have healthy habits. Participants indicated their willingness to work as a volunteer.

Activating scarcity mind-set significantly increased participants' intention to distribute flyers that call for reducing waste, $F(1, 216) = 8.57$, $p = .004$, $\eta^2 = .04$, but did not change volunteer intention when the flyer was about promoting healthy habits, $F(1, 216) = 0.01$, $p = .935$. Thus, the altruistic decision resulting from scarcity mind-set is restricted to the waste reduction domain.

Studies 4 and 5 examined whether scarcity mind-set would promote altruistic behaviors that benefiting potential others at a cost of self when a waste concern was present. Participants in Study 4 first finished scarcity manipulation and then made decision in a scenario that they could either spend efforts to donate some old books to the library or throw them to the rubbish bin. Participants in the scarcity condition reported higher donation likelihood than those in the control condition, $t(122) = 2.32$, $p = .022$, $d = 0.41$.

Study 5 adopted a 2 (mind-set: scarcity or control) \times 2 (waste concern: present or absent) between-participants design. The whole procedure was identical to Study 1. The main difference is that they received two boxes of biscuits rather than drinks, one was large (45 g) and one was small (20 g). Participants in the waste concern *present* (*absent*) condition read that they *cannot* (*can*) take away the left-over biscuits. They were informed that they could only choose one box to taste and the other would be left to the following participants. Activating scarcity mind-set increased the choice of large box when the waste concern was absent, $\chi^2(1) = 5.17$, $p = .023$, but decreased the choice of large box when the waste concern was present, $\chi^2(1) = 5.79$, $p = .016$.

Studies 6 and 7 tested the moderation of cost type and adopted a 2 (mind-set: scarcity or control) \times 2 (cost: time or money) between-participants design. Two studies used the same scarcity mind-set manipulation. Specifically, participants either listed things they would not be able to do if five resources were unavailable (*scarcity* condition) or three things they could do with these resources (*control* condition). Afterwards, participants in Study 6 imagined that they could donate some old books to a local library by either spending 30 minutes or \$10. Study 7 used another scenario about spending money or time to reduce food waste in the campus. Two studies consistently found that activating scarcity mind-set increased altruistic decision when the cost was time, $ps < .038$, but decreased it when the cost was money, $ps < .195$.

The current research indicates that scarcity could increase prosocial tendency, a positive-tuned consequence. Our findings suggest that the effects of resource scarcity on decision making may be more complicated than extant literature suggests and warrant further investigations.

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