

# The influence of mindsets on risk perception and risk-taking behavior

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## Background:

According to mindset theory of action phases<sup>1</sup>, individuals traverse various phases and mindsets during their goal pursuit. While weighing potential choices, people are in a deliberative mindset. When pondering how to implement one's decision, people are in an implemental mindset. These mindsets have consequences for information processing, feelings of control, as well as risk perception and risk-taking behavior.

## Research question:

Do mindset inductions (*deliberative vs. implemental vs. control*) alter how people perceive and take risks?

## Method:

Exp. 1 – Risk perception<sup>2</sup>. After mindset induction, we subjected 114 high school students to an illusory optimism task paradigm – gauging their risk and that of an average peer.

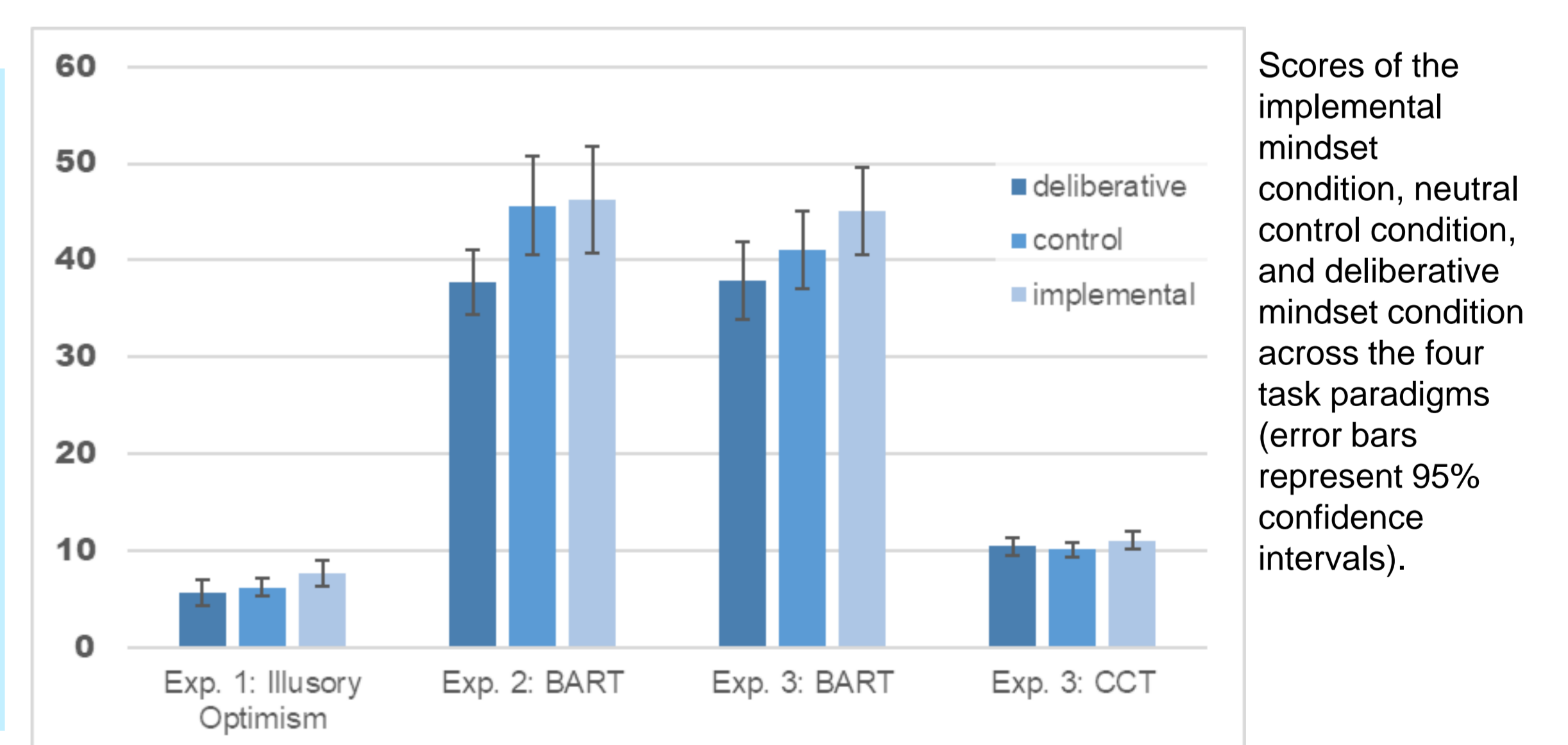
Exp. 2 – Risk taking<sup>2</sup>. After assessing various background variables days before, 75 participants played the Balloon Analogue Risk Task (BART)<sup>3</sup> after mindset induction.

Exp. 3 – Replication + Extension. After the mindset induction, 169 participants performed the BART, 156 of them also performed the Columbia Card Task (CCT)<sup>4</sup>, another established risk-taking measure. Order of the two incentivized tasks was counterbalanced.

|   | Exp. 1<br>(Illusory optimism)                        | Exp. 2<br>(BART)                             | Exp. 3<br>(BART) | Exp. 3<br>(CCT)                                  |
|---|--|--|------------------|--|
| <i>N</i>                                      | 114  | 75   | 169              | 156  |
| Main score of interest                        | Illusory optimism concerning controllable life risks | Adjusted average number of pumps in the BART |                  | Adjusted average number of card flips in the CCT |
| Score in the deliberative mindset             | $M = 5.6$ ( $SD = 4.1$ )                             | 37.8 (8.3)                                   | 37.9 (15.3)      | 10.4 (3.6)                                       |
| Score in the implemental mindset              | $M = 7.7$ ( $SD = 4.1$ )                             | 46.3 (14.4)                                  | 45.1 (17.4)      | 11.1 (3.3)                                       |
| Effect size<br>(deliberative vs. implemental) | $d = 0.44$   | 0.58   | 0.44             | 0.18, <i>n.s.</i>                                |

## Results:

In Experiment 1, participants in an implemental mindset exhibit higher illusory optimism. In Experiments 2 and 3, data from the BART indicate that participants in an implemental mindset are more willing to take risks, at least when it comes to inflating balloons. In Experiment 3, these effects do not evince in another behavioral risk-taking measure, the CCT.



## Conclusion:

First, differences in mindsets affect risk perception and risk-taking behavior. People who weigh their choices are less willing to take risks as well as more realistic when it comes to their own vulnerability than people who have decided in favor of a specific goal and plan its implementation.

Second, differences we found in the BART did not emerge in the CCT. These findings point to a difference in either sensitivity or in task structure. Upon closer inspection, the CCT measures decision making under risk, whereas by standard administration, the BART measures decision making under uncertainty; this would be in line with the surprisingly low but significant correlation between the two measures ( $r(154) = .21, p = .008$ ).

## References:

<sup>1</sup>Gollwitzer, P. M. (2012). Mindset theory of action phases. In P. Van Lange, A. W. Kruglanski, & E. T. Higgins, *Handbook of Theories of Social Psychology* (pp. 526–545). London: Sage Publications. <sup>2</sup>Keller, L., & Gollwitzer, P. M. (2017). Mindsets affect risk perception and risk-taking behavior: Illusory optimism and the BART. *Social Psychology, 48*, 135–147 <sup>3</sup>Lejuez, C. W., Read, J. P., Kahler, C. W., Richards, J. B., Ramsey, S. E., Stuart, G. L., ..., Brown, R. A. (2002). Evaluation of a behavioral measure of risk taking: The Balloon Analogue Risk Task (BART). *Journal of Experimental Psychology: Applied, 8*, 75–84. <sup>4</sup>Figner, B., Mackinlay, R. J., Wilkening, F., & Weber, E. U. (2009). Affective and deliberative processes in risky choice: Age differences in risk taking in the Columbia Card Task. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 35*, 709–730.