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DRIVERS OF PROSOCIAL BEHAVIOUR: EXPLORING THE ROLE OF MINDSET AND PERCEIVED COST

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ABSTRACT

Past research has indicated that an abstract mindset activation leads to higher prosocial behaviour than a concrete mindset activation. In addition to exploring this relationship, we further examined the role of perceived cost as a mediator of the mindset-prosocial behaviour link. Participants completed mindset activation tasks and rated their perceived cost and prosocial behaviour. Results reconfirmed that an abstract mindset increased prosocial behaviour and further revealed that while the perceived cost was negatively correlated to prosocial behaviour, it did not emerge as a mediator of the mindset-prosocial behaviour link.

INTRODUCTION

Prosocial behaviour has been broadly defined as "voluntary, intentional behaviour that results in benefits for another" (Eisenberg & Miller, 1987, p. 92). Helping, cooperating, comforting and sharing are examples of prosocial behaviour (Dunfield, 2014; Henrich & Henrich, 2006). Research has shown that people relate prosocial acts with happiness (Aknin et al., 2015), a sense of belonging (Twenge et al., 2007), positive interpersonal interactions (Layous et al., 2012) and enhanced chances of survival during natural disasters (Rao et al., 2011). While prosocial behaviour confers multiple gains, it comes at a personal cost. Helping requires attention (Wilson, 2003), self-regulation (Blake et al., 2015), and effort (Lockwood et al., 2017). Consequently, the way a prosocial task is perceived may influence the will to offer help (Lanaj et al., 2016).

Our study aims to look into the related factors that drive prosocial behaviour. Specifically, we seek to investigate whether the perceived cost is considered important before performing prosocial behaviour. An emerging body of research suggests that individuals who adopt an abstract mindset, as compared to a concrete mindset, exhibit greater prosocial behaviour (Choi et al., 2011; Levy et al., 2002; Singh & Teoh, 2014). We further explore if the perceived cost of performing prosocial behaviour is an underlying mechanism to the mindset-prosocial behaviour relationship.

Mindsets

Social-cognitive literature extends our understanding on the different ways people perceive events. Construal Level Theory (Trope & Liberman, 2003), a social-cognitive theory, posits that events in the distant future are construed abstractly, and events in the near future are construed concretely. Malkoc et al. (2010) defined abstract mindsets as, "cognitive processes that are broad, lead to decontextualized information processing, and are more inclusive of information that is not immediately available" and concrete mindsets as "cognitive procedures that are bounded by the context and include information structures present in the immediate situation" (p. 114). Liberman and Trope (1998) demonstrated that distant future events (e.g., cleaning the house next year) were interpreted in terms of superordinate "why" aspects (e.g., showing one's cleanliness) while near future events (e.g., cleaning the house tomorrow) were interpreted in terms of its subordinate "how" aspects (e.g., vacuuming the floor). More relevant to our study, priming mindsets activate abstract and concrete construals that are conceptually similar to those used when manipulating temporal distance (Torelli & Kaikati, 2009). The activation of abstract and concrete mindsets has been shown to influence subsequent attitudes and behaviour (Nordhall & Agerström, 2013).

Mindsets and Prosocial Behaviour

Research has indicated links between mindsets and prosocial behaviour. More precisely, an abstract mindset results in greater prosocial behaviour than a concrete mindset (Levy et al., 2002; Singh & Teoh, 2014). For example, Singh and Teoh (2014) measured the prosocial intentions of people after priming their respective mindsets. Participants in the abstract mindset condition rated higher prosocial intentions than those in the concrete mindset condition. The authors reasoned that the availability of values was enhanced under an abstract mindset. Indeed, Torelli and Kaikati (2009) claimed that an abstract mindset facilitates the interpretation of an event in terms of its relevant values, thereby resulting in value-congruent behaviour.

Levy et al. (2002) reported that an increase in abstract-mindedness in people was associated with increased prosocial behaviour. They also found that empathy mediated this relationship. Nonetheless, the authors used a correlational design, limiting causal explanations. Taken together, the accessibility of values and empathy could explain the mindset-prosocial behaviour link. We further suggest that the perceived cost of performing prosocial behaviour could mediate the mindset-prosocial behaviour relationship.

Perceived Cost and Prosocial Behaviour

Researchers have noted that prosocial behaviour involves a cost to the individual (Barrett et al., 2002; Twenge et al., 2007). Economic models argue that people are motivated to reduce their cost (Callaghan & Lazard, 2011), and thus a higher perceived cost has been negatively associated with the likelihood of prosocial engagement. For example, when participants in a virtual evacuation study needed to make a longer detour to help, helping rates decreased (Bode et al., 2015). Similarly, Lu and Chan (2015) demonstrated that when participants had to walk to another location to help, as compared to doing the task in the same location, they were less

willing to help. Noteworthy, past studies have operationalised the perceived cost differently. In our study, the perceived cost refers to anything one believes one needs to forgo to help someone.

Mindsets, Perceived Cost, and Prosocial Behaviour

While a negative association exists between the perceived cost and prosocial behaviour, we additionally propose that the type of mindset can influence the extent of cost perceived. Aknin et al. (2014) demonstrated that the type of mindset could alter evaluations of prosocial behaviour. Drawing upon Henrich and Henrich's (2006) claim that prosocial behaviour entails favourable abstract features and unfavourable concrete features, they reasoned that the positive attributes of prosocial behaviour (e.g., meaning), are more salient than its negative attributes (e.g., sacrifices) under an abstract mindset. They found that the abstract mindset condition perceived greater benefits in terms of life satisfaction and happiness from performing prosocial behaviour than the concrete mindset condition.

We further suggest that the type of mindset could influence cost evaluations of prosocial behaviour. The statement that prosocial behaviour consists of favourable abstract aspects and unfavourable concrete aspects (Henrich & Henrich, 2006) implies two possibilities; people having an abstract mindset will (1) perceive more benefits and (2) perceive lesser cost than those having a concrete mindset. The former possibility has been demonstrated by Aknin et al. (2014), and we contend that the latter possibility may also be true. For instance, donating blood can be abstractly construed as saving lives but concretely construed as having needles injected into one's skin. Consequently, this may lead to a lower perceived cost under an abstract mindset than under a concrete mindset.

Two studies lend us some indirect support. First, Rudd et al. (2014) found that people who made concrete prosocial goals (e.g., make someone smile) instead of abstract prosocial goals (e.g., make someone happy) experienced greater happiness as a result of having more accurate predictions. Accordingly, adopting a concretely framed prosocial goal rather than an abstractly-framed prosocial goal enabled people to anticipate better obstacles, opportunities, and ways to perform the behaviour. This may imply that a concrete mindset allows for a more precise cost perception of prosocial behaviour whereas an abstract mindset underestimates the cost involved. Similarly, Liberman and Trope (1998) reasoned that people with an abstract mindset planned more activities than those with a concrete mindset because they were less cognizant of time constraints. Once again, this suggests that the perceived cost may be underestimated under an abstract mindset but given more consideration under a concrete mindset.

Research has shown that having an abstract mindset results in higher prosocial behaviour than having a concrete mindset. We aim to extend past findings by investigating whether the perceived cost could emerge as a mediator of the mindset-prosocial behaviour link.

HYPOTHESES

Hypothesis 1: Participants primed with an abstract mindset will show higher prosocial behaviour than participants primed with a concrete mindset.

Hypothesis 2: Participants primed with an abstract mindset will have a lower cost perception of prosocial tasks than participants primed with a concrete mindset.

Hypothesis 3: Prosocial behaviour will be higher for tasks that are perceived to have a lower cost than tasks that are perceived to have a higher cost.

Hypothesis 4: Cost perception will mediate the relationship between the type of mindset and prosocial behaviour.

METHOD

Participants and Design

One hundred and forty-eight students (55 males and 93 females; $M_{age} = 22.06$, $SD_{age} = 2.59$) were recruited from James Cook University Singapore in exchange for course credits and were randomly allocated to the abstract mindset condition or the concrete mindset condition. We employed a between-groups design with the type of mindset as the independent variable and prosocial behaviour as the dependent variable. In addition, cost perception was hypothesized to be the mediator variable.

Materials and Procedure

The experiment started with participants responding to a demographic survey, followed by mindset activation tasks. Research in priming has shown that unscrambling sentences automatically activates the concept associated with the words (Shariff & Norenzayan, 2007). Ganesan and Singh (2015) further demonstrated that unscrambling abstract words and concrete words led to abstract thinking and concrete thinking, respectively. Therefore, using the Anagram Task by the authors, we gave abstract words (e.g., ssSucce) to participants in the abstract mindset condition to unscramble and concrete words (e.g., teChocola) to participants in the concrete mindset condition to unscramble.

Next, participants completed the Sentence Completion Task by Ganesan and Singh (2015). Participants in the abstract mindset condition were asked to generate a superordinate category for a sentence like "Singer is an example of ____". Participants in the concrete mindset condition were asked to generate a subordinate exemplar for a sentence like "An example of a singer is ____".

Then, participants were given the manipulation check, which was adapted from Fujita et al. (2006) and Vallacher and Wegner (1989). Participants were given eight activities and tasked to pick the best representative statement for each activity. For example, an activity of "sweeping the classroom" would consist of a high-level re-description of "keeping the classroom clean" (scored 1) and a low-level re-description of "using a broom to sweep the classroom" (scored 0).

Finally, participants were presented with the Prosocial Decision-Making Questionnaire (PDMQ) which comprised 10 prosocial activities (see Appendix A). Each activity was to be rated on two 7-point interval scales. The first measured the perceived cost (1 = no cost, 7 = extremely costly),

and the second measured the likelihood of participating in that activity (1 = not likely, 7 = most likely).

RESULTS

Preliminary Analysis

A one-way between-groups analysis of variance (ANOVA) showed that participants in the abstract mindset condition ($M = 4.92$, $SD = 1.59$) had significantly higher abstract mindedness than participants in the concrete mindset condition ($M = 4.28$, $SD = 1.75$), $F(1, 146) = 5.36$, $p = .02$.

Perceived Cost and Prosocial Behaviour: Two Constructs

To test the hypothesised constructs of the PMDQ, we conducted an exploratory factor analysis (EFA) using principal axis factoring with direct oblimin rotation on the PDMQ items. Four items with low factor loadings were removed. The Kaiser-Meyer-Olkin value was .72 and Bartlett's Test of Sphericity reached statistical significance, $chi-square(120) = 686.39$, $p < .01$. EFA revealed two components (see Table 1) with eigenvalues greater than 1, explaining 32.59 percent of the variance. Cronbach's alpha for the perceived cost and prosocial behaviour were .79 and .73, respectively.

Table 1
Exploratory Factor Analysis (with Direct Oblimin Rotation) for the Factors of Perceived Cost and Prosocial Behaviour

Item	Perceived Cost	Prosocial Behaviour
1A: (how costly) Sharing personal study notes with your classmate	.45	
2A: (how costly) Bringing your own bag instead of using the plastic bag provided for your shopping needs	.44	
3A: (how costly) Donating blood during a Red Cross event	.55	
4A: (how costly) Visiting the old folks home and performing a short item to entertain the elderly	.61	
5A: (how costly) Separating your trash from recyclable items	.70	
6A: (how costly) Packing old clothes to give to the less fortunate	.76	
7A: (how costly) Volunteering to manually build a school in a developing country	.51	

8A: (how costly) Organising an outing for mentally disabled children	.49
1B: (how likely) Donating money to overseas earthquake victim	.54
2B: (how likely) Bringing your own bag instead of using the plastic bag provided for your shopping needs	.33
3B: (how likely) Donating blood during a Red Cross event	.32
4B: (how likely) Volunteering to teach primary school children for two hours each week	.54
5B: (how likely) Visiting the old folks home and performing a short item to entertain the elderly	.56
6B: (how likely) Packing old clothes to give to the less fortunate	.41
7B: (how likely) Volunteering to manually build a school in a developing country	.56
8B: (how likely) Organising an outing for mentally disabled children	.80

Hypotheses Testing

Hypothesis 1

A one-way between-groups ANOVA showed that participants in the abstract mindset condition ($M = 4.77$, $SD = 0.96$) reported significantly higher prosocial behaviour than participants in the concrete mindset condition ($M = 4.38$, $SD = 0.98$), $F(1, 146) = 5.91$, $p = .02$, *partial eta squared* = .04. Hypothesis 1 was supported.

Hypothesis 2

A one-way between-groups ANOVA showed that there was no significant difference in the perceived cost between participants in the abstract mindset condition ($M = 2.88$, $SD = 0.92$) and participants in the concrete mindset condition ($M = 3.12$, $SD = 1.09$), $F(1, 146) = 2.15$, $p = .15$, *partial eta squared* = .01. Hypothesis 2 was not supported.

Hypothesis 3

A simple linear regression revealed that the perceived cost was a significant predictor of prosocial behaviour, $\beta = -.25$, $t(146) = -3.11$, $p < .01$, *R-squared* = .06, with a lower cost perception predicting higher prosocial behaviour. Hypothesis 3 was supported.

Hypothesis 4

We adopted the four-step approach by Baron and Kenny (1986) to test for mediation. As Hypothesis 2 was not supported, the second step, which requires that the independent variable predicts the mediator variable, was not fulfilled. Hypothesis 4 was not supported.

DISCUSSION

Findings

Replicating past research (Bode et al., 2015; Lu & Chan, 2015), our findings showed that the perceived cost was negatively associated with prosocial behaviour. This is consistent with economic models of prosocial behaviour, which claim that people are motivated to reduce their cost (Callaghan & Lazard, 2011), suggesting that prosocial behaviour is egoistic as people consider their welfare (Batson & Shaw, 1991).

As expected, an abstract mindset resulted in greater prosocial behaviour than a concrete mindset. This corroborates past studies, which have also postulated that an abstract mindset enhances the accessibility of values (Choi et al., 2011; Singh & Teoh, 2014). Although Levy et al. (2002) claimed that empathy was a mediator, we reason that empathy which measured altruistic motivations cannot co-occur with egoistic motivations as they pursue contrasting goals (Batson & Shaw, 1991). Since Levy and colleagues conducted a correlational study, it could be that people who naturally thought abstractly also had greater empathetic concerns for others. In contrast, our experimental study found that people operated on cost concerns. Therefore, the salience of values better explains our result.

Contradicting our prediction, people with an abstract mindset did not perceive lesser cost than those with a concrete mindset. It is possible that negativity bias (Rozin & Royzman, 2001), a phenomenon whereby negative information is given more weight during decision-making, resulted in similar cost evaluations. As the type of mindset did not impact the perceived cost, cost perception did not emerge as a mediator variable.

Strengths, Limitations, and Future Directions

Whereas previous research (e.g., Aknin et al., 2014) tested the effects of an abstract mindset through the increased saliency of abstract construals, we investigated if an abstract mindset could also exert its influence by making concrete construals less salient. We believe this provides a more complete understanding of the pathways that an abstract mindset may work through. We also catered for a comprehensive operationalisation of perceived cost by not restricting participants to a particular domain (e.g., time-related cost) when measuring the perceived cost of performing a prosocial task, and assessed that across different types of prosocial behaviour (e.g., donating, volunteering). To reduce negativity bias, future research could elicit cost perceptions by asking "how easy" instead of "how costly". Krebs (1991) argued that one's altruistic motivations interact with one's egoistic motivations to achieve a desired prosocial outcome. Thus, it will be interesting to measure empathy alongside perceived cost as potential mediators and test our assumption of prosocial behaviour being purely egoistic in nature.

CONCLUSION

In sum, our study reaffirmed the effect of an abstract mindset in driving prosocial behaviour and showed that prosocial behaviour would be high if the perceived cost is low.

REFERENCES

- Aknin, L. B., Broesch, T., Hamlin, J. K., & Vondervoort, J. W. V. (2015). Prosocial behavior leads to happiness in a small-scale rural society. *Journal of Experimental Psychology, 144*(4), 788-795. Doi: 10.1037/xge0000082
- Aknin, L. B., Van Boven, L., & Johnson-Graham, L. (2014). Abstract construals make the emotional rewards of prosocial behavior more salient. *The Journal of Positive Psychology, 10*(5), 1-5. Doi: 10.1080/17439760.2014.967801
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173-1182. Doi: 10.1037/0022-3514.51.6.1173
- Barrett, L., Dunbar, R., & Lycett, J. (2002). *Human evolutionary psychology*. Princeton, NJ: Princeton University Press.
- Batson, C. D., & Shaw, L. L. (1991). Evidence for altruism: Toward a pluralism of prosocial motives. *Psychological Inquiry, 2*(22), 107-122. Doi: 10.1207/s15327965pli0202_1
- Blake, P. R., Piovesan, M., Montinari, N., Warneken, F., & Gino, F. (2015). Prosocial norms in the classroom: The role of self-regulation in the norms of giving. *Journal of Economic Behavior & Organization, 115*, 18-29
- Bode, N. W. F., Miller, J., O'Gorman, R., & Codling, E. A. (2015). Increased costs reduce reciprocal helping behaviour of humans in a virtual evacuation experiment. *Scientific Reports, 5*, 1-13. Doi: 10.1038/srep15896
- Callaghan, J., & Lazard, L. (2011). *Social Psychology*. Exeter, UK: Learning Matters.
- Choi, S. Y., Park, H. S., & Oh, J. Y. (2011). Temporal distance and blood donation intention. *Journal of Health Psychology, 17*(4), 590-599. Doi: 10.1177/1359105311421048
- Dunfield, K. A. (2014). A construct divided: Prosocial behavior as helping, sharing and comforting subtypes. *Frontiers in Psychology, 5*, 1-13. Doi:10.3389/fpsyg.2014.00958
- Eisenberg, N., & Miller, P. A. (1987). The relation of empathy to prosocial and related behaviors. *Psychological Bulletin, 101*(1), 91-119. Doi: 10.1037/0033-2909.101.1.91
- Fujita, K., Trope, Y., Liberman, N., & Levin-Sagi. (2006). Construal levels and self-control. *Journal of Personality and Social Psychology, 90*(3), 351-367. Doi: 10.1037/0022-3514.90.3.351

- Ganesan, M. D., & Singh, S. (2015). Exploring the relationship between abstract mindedness, self-regulation and prosocial behaviour. *Proceedings of the Asian Congress of Applied Psychology, Singapore, 4013*, 78-107. Doi: 10.1142/9789814723398_0005
- Henrich, J., & Henrich, N. (2006). Culture, evolution and the puzzle of human cooperation. *Cognitive Systems Research, 7*(2), 220-245. Doi: 10.1016/j.cogsys.2005.11.010
- Krebs, D. L. (1991). Altruism and egoism: A false dichotomy?. *Psychological Inquiry, 2*(2), 137-139. Doi: 10.1207/s15327965pli0202_9
- Lanaj, K., Johnson, R. E., & Wang, M. (2016). When lending a hand depletes the will: The daily costs and benefits of helping. *Journal of Applied Psychology, 101*(8), 1097-1110. Doi: 10.1037/apl0000118
- Layous, K., Nelson, S. K., Oberle, E., Schonert-Reichi, K. A., & Lyubomirsky, S. (2012). Kindness counts: Promoting prosocial behavior in preadolescents boosts peer acceptance and well-being. *Plos One, 7*(12), 1-3. Doi: 10.1371/journal.pone.0051380
- Levy, S. R., Freitas, A., & Salovey, P. (2002). Construing action abstractly and blurring social distinctions: Implications for perceiving homogeneity among, but also empathizing with and helping, others. *Journal of Personality and Social Psychology, 83*(5), 1224-1238. Doi: 10.1037/0022-3514.83.5.1224
- Liberman, N., & Trope, Y. (1998). The role of feasibility and desirability considerations in near and future decisions: A test of temporal construal theory. *Attitudes and Social Cognition, 75*(1), 5-18. Doi: 10.1037/0022-3514.75.1.5
- Lockwood, P. L., Hamomet, M., Zhang, S. H., Ratnavel, A., Salmony, F. U., Husain, M., & Apps, M. A. J. (2017). Prosocial apathy for helping other when effort is required. *Nature Human Behaviour, 1*, 1-10. Doi: 10.1038/s41562-017-0131
- Lu, H. J., & Chan, K. Y. (2015). Religious priming increases help if requestors dress poorly: Effects of dress, priming, and task difficulty on helping behaviors. *International Journal of Psychological Studies, 7*(2), 164-173. Doi: 10.5539/ijps.v7n2p164
- Malkoc, S. A., Zauberan, G., & Bettman, J. R. (2010). Unstuck from the concrete: Carryover effects of abstract mindsets in intertemporal preferences. *Organizational Behavior and Human Decision Processes, 113*(2), 112-126. Doi: 10.1016/j.obhdp.2010.07.003
- Nordhall, O., & Agerström, J. (2013). Future-oriented people show stronger moral concerns. *Current Research in Social Psychology, 21*(6), 52-63.
https://crisp.org.uiowa.edu/sites/crisp.org.uiowa.edu/files/2020-04/art9.12.13_1.pdf
- Rao, L. L., Han, R., Ren, X. P., Bai, X. W., Zheng, R., Liu, H., Wang, Z. J., Li, J. Z., Zhang, K., & Li, S. (2011). Disadvantage and prosocial behaviour: The effects of the Wenchuan earthquake. *Evolution and Human Behaviour, 32*, 63-69. Doi: 10.1016/j.evolhumbehav.2010.07.002

- Rozin, P., & Royzman, E. B. (2001). Negativity bias, negativity dominance, and contagion. *Personality and Social Psychology Review*, 5(4), 296-320. Doi: 10.1207/S15327957PSPR0504_2
- Rudd, M., Aaker, J., & Norton, M. I. (2014). Getting the most out of giving: Concretely framing a prosocial goal maximises happiness. *Journal of Experimental Social Psychology*, 54, 11-24. Doi: 10.1016/j.jesp.2014.04.002
- Shariff, A. F., & Norenzayan, A. (2007). God is watching you: Priming God concept increases prosocial behavior in an anonymous economic game. *Psychological Science*, 18(9), 803-809. Doi: 10.1111/j.1467-9280.2007.01983.x
- Singh, S., & Teoh, V. Y. (2014). Enhancing prosocial behavior among college students: Exploring the role of abstract mindset. *Journal of Law and Social Sciences*, 3(2), 28-32. Doi: 10.5176/2251-2853_3.2.154
- Torelli, C. J., & Kaikati, A. M. (2009). Values as predictors of judgements and behaviors: The role of abstract and concrete mindsets. *Journal of Personality and Social Psychology*, 96(1), 231-247. Doi: 10.1037/a0013836
- Trope, Y., & Liberman, N. (2003). Temporal construal. *Psychological Review*, 110(3), 403-421. Doi: 10.1037/0033-295X.110.3.403
- Twenge, J. M., Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Bartels, J. M. (2007). Social exclusion decreases prosocial behavior. *Journal of Personality and Social Psychology*, 92(1), 56-66. Doi: 10.1037/0022-3514.92.1.56
- Vallacher, R. R., & Wegner, D. M. (1989). Levels of personal agency: Individual variation in action identification. *Journal of Personality and Social Psychology*, 57(4), 660-671. Doi: 10.1037/0022-3514.57.4.660
- Wilson, B. J. (2003). The role of attentional processes in children's prosocial behavior with peers: Attention shifting and emotion. *Development and Psychopathology*, 15(2), 313-329. Doi: 10.1017/S0954579403000178

APPENDIX A: PROSOCIAL DECISION-MAKING QUESTIONNAIRE

List of Activities

- Activity 1: Sharing personal study notes with your classmate
- Activity 2: Donating money to overseas earthquake victims
- Activity 3: Bringing your own bag instead of using the plastic bag provided for your shopping needs
- Activity 4: Donating blood during a Red Cross event
- Activity 5: Volunteering to teach primary school children for two hours each week

- Activity 6: Visiting the old folks home and performing a short item to entertain the elderly
 Activity 7: Separating your trash from recyclable items
 Activity 8: Packing old clothes to give to the less fortunate
 Activity 9: Volunteering to manually build a school in a developing country
 Activity 10: Organising an outing for mentally disabled children

APPENDIX B: CORRELATION MATRIX

Table 2
Correlations among Variables in the Study

Variables	1	2	3
1.Type of Mindset	1.00	.12	-.20*
2.Perceived Cost	.12	1.00	-.25**
3.Prosocial Behaviour	-.20*	-.25**	1.00
<i>M</i>	-	3.00	4.58
<i>SD</i>	-	1.01	0.99
<i>N</i>	148	148	148

* $p < .05$

** $p < .01$

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