Open notebook of perpecptual salience of positive self

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# General method

## Participants. The experiments (except experiment 3b) reported in the current study were first conducted between 2014 to 2016 in Tsinghua University, Beijing, participants of these experiments were recruited in Tsinghua University community. To increase the power by adding collecting more data so that each experiment has 50 or more valid data (Simmons, Nelson, & Simonsohn, 2013) , we recruited additional participants in Wenzhou University, Wenzhou, China in 2017. However, duo to the limited time and resources, additional data were not collected for experiment 2, 3, and 4b.

## Stimuli and procedure. In the current study, we used the social associative learning paradigm (Sui, He, & Humphreys, 2012), in which participants first learn the associations between geometric shapes and labels of person with different moral valence (e.g., in first three studies, the triangle, square, and circle and good person, neutral person, and bad person, respectively). The associations of the shapes and label were counterbalanced across participants. After learning phase, participants finish a practice phase to familiar with the task, in which they viewed one of the shapes upon the fixation while one of the labels below the fixation and judged whether the shape and the label were matched. When participants can get 60% or higher accuracy at the end of the practicing session, they can start the experimental task which is the same as in the practice phase.

If not noted, E-prime 2.0 was used in all experiments. For participants recruited in Tsinghua University, they finished the experiment individually in a dim-lighted chamber, stimuli were presented on 22-inch CRT monitors, with a chin-rest brace. The visual angle of geometric shapes was about 3.7º × 3.7º, the finxation cross is of (0.8º × 0.8º of visual angle) at the center of the screen. The words were of 3.6º × 1.6º visual angle. The distance between the center of the shape or the word and the fixation cross was 3.5º of visual angle. Participant fixed their head on a chin-fixation, about 60 cm from the screen.

For participants recruited in Wenzhou University, they finished the experiment in a group consist of 3 ~ 12 participants in a dim-lighted testing room. Participants were required to finished the whole experiment independently. Also, they were instructed to start the experiment at the same time, so that the distraction between participants were minimized. The stimuli were presented on 19-inch CRT monitor. The visual angles are could not be exactly controlled because participants’s chin were not fixed.

## Data analysis. We reported all the measurements, analysis and results in all the experiments in the current study. All data were first pre-processed using R (3.1.0, R core teams, 2018) and then analyzed using JASP (0.8.6.0, www.jasp-stats.org, (Love et al., 2019)). Participants whose overall accuracy lower than 60% were excluded from analysis. Also, the accurate responses with less than 200ms reaction times were excluded from the analysis.

We analyzed accuracy performance using a signal detection approach, as in Sui et al. (2012). The performance in each match condition was combined with that in the nonmatching condition with the same shape to form a measure of d’. Trials without response were coded either as “miss” (matched trials) or “false alarm” (mismatched trials). The d’ were then analyzed using repeated measures analyses of variance (repeated measures ANOVA).

The reaction times of accurate trials were also analyzed using repeated measures ANOVA. To control the false positive when conducting the post-hoc comparisons, we used Bonferroni correction. Please note that in the first two experiment (experiment 1a and 1b), we included the variable matchness (matched vs. mismatched) in our ANOVA of reaction times and then examine matched trials and mismatched trials separately when the interaction between matchness and other variables are significant. In both experiments, we found significant interaction between matchness and valence. Then, as previous study, we focused on the matched trial for the rest of the experiment (Sui et al., 2012).

We reported the effect size of repeated measures ANOVA (ω²) (Bakeman, 2005; Lakens, 2013). Also, we reported Cohen’s d and its 95% confidence intervals for the post-hoc comparisons. To provide more information about the results, we also reported the Bayes Factor using JASP (Hu, Kong, Wagenmakers, Ly, & Peng, 2018; Wagenmakers et al., 2018). The Bayes factor is the ratio of the probability of the current data pattern under alternative hypothesis (H1) and the probability of the current data pattern under null hypothesis (H0), which index the relative evidence for these two hypotheses from the current data. The BF10 represents the evidence for alternative hypothesis (H1) vs. evidence for null hypothesis (H0); in contrast, BF01 represents that evidence for null hypothesis over the evidence for althernative hypothesis. We used the default prior in JASP for all the Bayes Factor analyses, and used Jeffreys (1961)’s convention for the strength of evidence: the BF10 > 3 means there are some evidence for H1 as compared with H0, BF10 ≥ 10 means strong evidence for H1.

To assess the individual difference, we explored correlation between self-reported psychological distance and more objective responses bias (i.e., reaction times and d prime). To do this, we first normalized the personal distance by taking the percentage of the mean distance between each two persons in the sum of all 6 distances (self-good, self-normal, self-bad, good-normal, good-bad, normal-bad), and then calculated the bias score (indexed by the differences between good-normal, good-bad). Also, as exploratory analysis, we analyzed the correlation between behavioral response and moral identity, self-esteem, if data are available. As recent study showed that small size leads to unstable correlation estimates (Schönbrodt & Perugini, 2013), we only reported the correlation based on data pooled from all experiments, while the results of each experiment were reported in supplementary results.

## Participants

34 college students (26 female, age: 21.26 1.78) participated in experiment 5. All partcipants were right handed, and all had normal or corrected-to-normal vision. Informed consent was obtained from all partcipants prior to the experiment according to procedure approved by a local ethics committee. 2 of the participants data were excluded from the analysis because of less than 60% overall accuracy, leaving 32 participants (25 female, age: 21.28 1.76 years).

##Results ###Analaysis of d prime

ANOVA for *d’* with moral character and self-relatedness as within-subjects factors.

The main effect of Morality, *F*(2, 62) = 1.925, *p* = 0.1545, = 0.0131.

The main effect of Identity: *F*(1, 31) = 0.047, *p* = 0.8298, = 0

The interaction between Morality:Identity: *F*(2, 62) = 3.123, *p* = 0.051, = 0.0049.

Then we conducted sample effect analysis for self- and other- association separately for the matched trials (see figure 1).

A separate repeated ANOVA for self trials showed that the effect of Morality, *F*(2, 62) = 3.674, *p* = 0.0311, = 0.0316.

post-hoc comparision showed that moral self (2.609 0.864) vs immoral self (2.28 0.778): *t*(31) = 2.268, *p* = 0.03048, *Cohen’s* = 0.4008, 95% CI [-0.0473 0.8558]

Moral self (2.609 0.864) vs. Average self(2.343 0.761): *t*(31) = 2.478, *p* = 0.01888, *Cohen’s* = 0.438, 95% CI [0.048 0.8345]

Immoral self (2.28 0.778) vs. Average self (2.343 0.761): *t*(31) = -0.473, *p* = 0.63948, *Cohen’s* = -0.0836, 95% CI [-0.465 0.2727]

Moral other (2.484 0.817) vs immoral other (2.434 0.869): *t*(31) = 0.331, *p* = 0.7426, *Cohen’s* = 0.0586, 95% CI [-0.3001 0.4564]

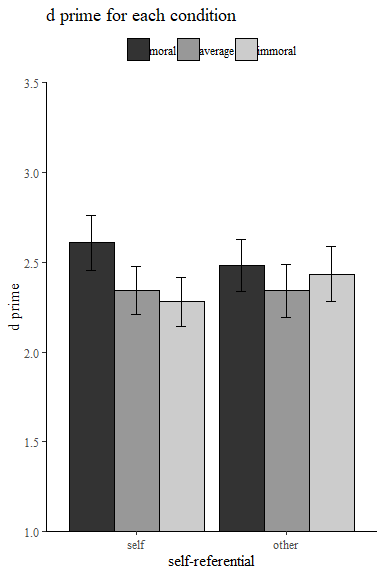
Moral other (2.484 0.817) vs. Average other (2.34 0.844): *t*(31) = 1.319, *p* = 0.19669, *Cohen’s* = 0.2332, 95% CI [-0.1377 0.6026]

Immoral other (2.434 0.869) vs. Average other(2.34 0.844): *t*(31) = 0.751, *p* = 0.45827, *Cohen’s* = 0.1328, 95% CI [-0.2304 0.4852]

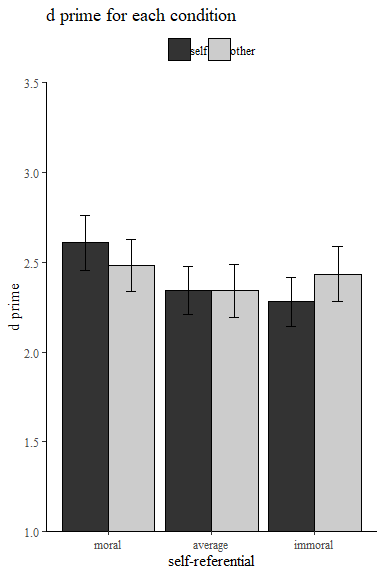
repeated ANOVA for other trials showed that the effect of Morality, *F*(2, 62) = 0.638, *p* = 0.5317, = 0.0051.

To examine the effect of self-relatedness, we also conducted t-test for self-other pair for each moral condition. moral self (2.609 0.864) vs. moral other (2.484 0.817): *t*(31) = 1.582, *p* = 0.12373, *Cohen’s* = 0.2797, 95% CI [-0.1316 0.6735]

Average self (2.343 0.761) vs. Average other (2.34 0.844): *t*(31) = 0.028, *p* = 0.97803, *Cohen’s* = 0.0049, 95% CI [-0.3473 0.3928] immoral self (2.28 0.778) vs. immoral other (2.434 0.869): *t*(31) = -2.393, *p* = 0.02294, *Cohen’s* = -0.4231, 95% CI [-0.7311 -0.0737]



The above figure shows the d prime for each condition (way 1)



The above figure shows the d prime for each condition (way 2)

We conducted a 3 \* 2 rmANOVA for RT For the matched trials, The effect of Morality: *F*(2, 62) = 8.75, *p* = 0.0004, = 0.0728

The effect of Identity: *F*(1, 31) = 0, *p* = 0.9949, = 0

The effect of Morality:Identity: *F*(2, 62) = 5.108, *p* = 0.0088, = 0.0055.

For the nonmatched trials, The effect of Morality: *F*(2, 62) = 6.914, *p* = 0.0019, = 0.0144

The effect of Identity: *F*(1, 31) = 0.749, *p* = 0.3936, = 0.0004

The effect of Morality:Identity: *F*(2, 62) = 0.064, *p* = 0.9384, = 0.0001.

Then we conducted sample effect analysis for self- and other- association separately for the matched trials. A separate ANOVA for self trials showed that the effect of Morality: *F*(2, 62) = 11.474, *p* = 0.0001, = 0.1028

A separate ANOVA for other trials showed that the effect of Morality: *F*(2, 62) = 4.928, *p* = 0.0103, = 0.0476

Moral self (670 64) vs immoral self (715 58): *t*(31) = -3.875, *p* = 0.00052, *Cohen’s* = -0.6849, 95% CI [-1.149 -0.2281]

Moral self (670 64) vs. average self (709 57): *t*(31) = -4.524, *p* = 0.00008, *Cohen’s* = -0.7997, 95% CI [-1.2423 -0.3605]

Immoral self (715 58) vs. average self (709 57): *t*(31) = 0.535, *p* = 0.59624, *Cohen’s* = 0.0946, 95% CI [-0.2711 0.4425]

Moral other (682 65) vs immoral other (712 45): *t*(31) = -3.875, *p* = 0.00052, *Cohen’s* = -0.6849, 95% CI [-1.1532 -0.2368]

Moral other (682 65) vs. average other (701 58): *t*(31) = -4.524, *p* = 0.00008, *Cohen’s* = -0.7997, 95% CI [-1.2272 -0.3597]

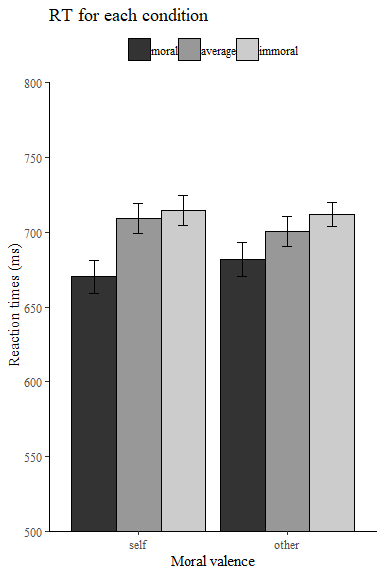
Immoral other (712 45) vs. average other(701 58): *t*(31) = 0.535, *p* = 0.59624, *Cohen’s* = 0.0946, 95% CI [-0.2638 0.4668]

To examine the effect of self-relatedness, we also conducted t-test for self-other pair for each moral condition.

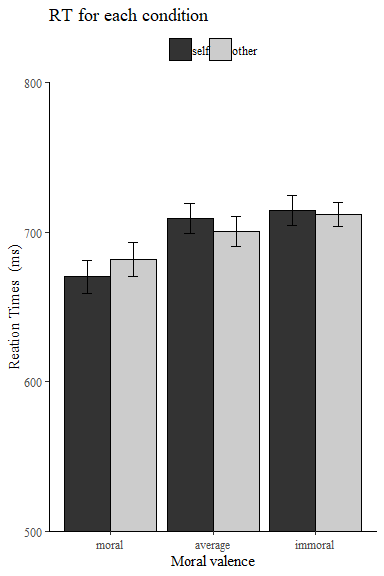
moral self (670 64) vs. moral other (682 65) : *t*(31) = -2.588, *p* = 0.01455, *Cohen’s* = -0.4576, 95% CI [-0.7768 -0.1526]

average self (709 57) vs. average other (701 58): *t*(31) = 2.598, *p* = 0.01422, *Cohen’s* = 0.4593, 95% CI [0.0445 0.8541]

immoral self (715 58) vs. immoral other (712 45): *t*(31) = 0.537, *p* = 0.59502, *Cohen’s* = 0.095, 95% CI [-0.2764 0.436]



The above is the reaction time for each condition



The above is another way to plot.