

Reporting Summary

Nature Research wishes to improve the reproducibility of the work that we publish. This form provides structure for consistency and transparency in reporting. For further information on Nature Research policies, see [Authors & Referees](#) and the [Editorial Policy Checklist](#).

Statistics

For all statistical analyses, confirm that the following items are present in the figure legend, table legend, main text, or Methods section.

- | | |
|--------------------------|--|
| n/a | Confirmed |
| ☐ | ☒ The exact sample size (n) for each experimental group/condition, given as a discrete number and unit of measurement |
| ☐ | ☒ A statement on whether measurements were taken from distinct samples or whether the same sample was measured repeatedly |
| ☐ | ☒ The statistical test(s) used AND whether they are one- or two-sided
<i>Only common tests should be described solely by name; describe more complex techniques in the Methods section.</i> |
| ☐ | ☒ A description of all covariates tested |
| ☐ | ☒ A description of any assumptions or corrections, such as tests of normality and adjustment for multiple comparisons |
| ☐ | ☒ A full description of the statistical parameters including central tendency (e.g. means) or other basic estimates (e.g. regression coefficient) AND variation (e.g. standard deviation) or associated estimates of uncertainty (e.g. confidence intervals) |
| ☐ | ☒ For null hypothesis testing, the test statistic (e.g. F , t , r) with confidence intervals, effect sizes, degrees of freedom and P value noted
<i>Give P values as exact values whenever suitable.</i> |
| ☐ | ☒ For Bayesian analysis, information on the choice of priors and Markov chain Monte Carlo settings |
| ☐ | ☒ For hierarchical and complex designs, identification of the appropriate level for tests and full reporting of outcomes |
| ☐ | ☒ Estimates of effect sizes (e.g. Cohen's d , Pearson's r), indicating how they were calculated |

Our web collection on [statistics for biologists](#) contains articles on many of the points above.

Software and code

Policy information about [availability of computer code](#)

Data collection

The computerized task were presented with Matlab (version R2016a) and its toolboxes Psychtoolbox-3 (replication experiment) and Cogent 2000 (eye-tracking experiment). Eye-tracking data was recorded with an SMI RED500 eye tracker and the software iView X (version 2.8).

Data analysis

Behavioral data was analyzed with Matlab (version R2018a) and R (version 3.5.2). Eye-tracking data was preprocessed (i.e., recoded into events such as saccades and fixations) with SMI's BeGaze software and further analyzed in R and Matlab.

For manuscripts utilizing custom algorithms or software that are central to the research but not yet described in published literature, software must be made available to editors/reviewers. We strongly encourage code deposition in a community repository (e.g. GitHub). See the Nature Research [guidelines for submitting code & software](#) for further information.

Data

Policy information about [availability of data](#)

All manuscripts must include a [data availability statement](#). This statement should provide the following information, where applicable:

- Accession codes, unique identifiers, or web links for publicly available datasets
- A list of figures that have associated raw data
- A description of any restrictions on data availability

Data of all participants included in the final samples of the two experiments are publicly available on OSF (<https://osf.io/qrv2e/>).

Field-specific reporting

Please select the one below that is the best fit for your research. If you are not sure, read the appropriate sections before making your selection.

☐ Life sciences ☒ Behavioural & social sciences ☐ Ecological, evolutionary & environmental sciences

For a reference copy of the document with all sections, see [nature.com/documents/nr-reporting-summary-flat.pdf](https://www.nature.com/documents/nr-reporting-summary-flat.pdf)

Behavioural & social sciences study design

All studies must disclose on these points even when the disclosure is negative.

Study description	Quantitative research study with a within-subject design. There are two experiments, a direct replication experiment and an eye-tracking experiment. Both experiments were preregistered at OSF (https://osf.io/qrv2e/registrations).
Research sample	A total of 148 participants took part in the study, 103 in the direct replication experiment, 45 in the eye-tracking experiment. For reasons outlined below, 1 participant in the direct replication had to be excluded, resulting in a final sample of 102 participants in this experiment (72 female, age: 18-51, M = 24.78, SD = 6.37; four participants did not report their age), and 8 participants in the eye-tracking experiment had to be excluded, resulting in a final sample of 37 participants in this experiment (26 female, age: 19-61, M = 27.63, SD = 11.14; one participant did not report their age). Representativeness of the sample was not ensured.
Sampling strategy	Convenience sampling; most of the participants were students of the University of Basel (87 in direct replication, 33 in the eye-tracking experiment). Sample sizes were determined based on a priori statistical power analyses. The power analysis for the direct replication experiment was based on the "Small Telescopes" approach for replication studies (details are provided in the manuscript). The power analysis for the eye-tracking experiment assumed a medium effect size of $d = 0.5$ for an effect of value-based attention on relative choice accuracy (one-sided, one-sample t-tests, alpha error = 5%, power = .90).
Data collection	Demographic data was collected with a pen-and-paper questionnaire. Behavioral data was collected with computerized tasks. Eye-tracking data was collected in the second experiment. The experimenters were not blind to the hypotheses of the study.
Timing	Experiment 1: Sept. - Nov. 2018; Experiment 2: March 2019
Data exclusions	One participant was excluded in the direct replication experiment who did not bid any money in the auction task for more than 50% of the snacks so that data analysis for this participant was made impossible. Eight participants were excluded in the eye-tracking experiment for the following reasons: Four participants were excluded due to incompatibilities with the eye-tracking device; another four participants were excluded for not passing one of the preregistered exclusion criteria (i.e., three participants rated more than 40% of the food snacks with 0, one participant chose the low-value target more often than the high-value target).
Non-participation	Apart from the above-mentioned four participants with eye-tracking incompatibility issues, no participant dropped out of the study.
Randomization	Not applicable as the study used a within-subject design.

Reporting for specific materials, systems and methods

We require information from authors about some types of materials, experimental systems and methods used in many studies. Here, indicate whether each material, system or method listed is relevant to your study. If you are not sure if a list item applies to your research, read the appropriate section before selecting a response.

Materials & experimental systems

n/a	Involved in the study
☒	☐ Antibodies
☒	☐ Eukaryotic cell lines
☒	☐ Palaeontology
☒	☐ Animals and other organisms
☐	☒ Human research participants
☒	☐ Clinical data

Methods

n/a	Involved in the study
☒	☐ ChIP-seq
☒	☐ Flow cytometry
☒	☐ MRI-based neuroimaging

Human research participants

Policy information about [studies involving human research participants](#)

Population characteristics	see above
Recruitment	Participants were recruited via two online platforms used by the Decision Neuroscience team at the Department of Psychology

Recruitment

in Basel. One platform is mainly used by psychology students, the other platform is mainly used by non-psychology students at the university.

Ethics oversight

Ethics Committee of the Department of Psychology at the University of Basel

Note that full information on the approval of the study protocol must also be provided in the manuscript.