# ARTICLE INFORMATION

**Article title**

Dataset for the Modulations in Spatial Attention Across Depth: Attention versus Perception

**Authors**

*Noah Britt1, and Hong-jin Sun\*1*

*1McMaster University, Hamilton, Ontario, Canada*

***Author Note***

*Noah Britt (*[*brittn@mcmaster.ca*](mailto:brittn@mcmaster.ca)*) ORCID iD* [*https://orcid.org/0000-0001-5020-4528*](https://orcid.org/0000-0001-5020-4528)

*Hong-jin Sun ORCID iD* [*https://orcid.org/0000-0003-3084-2527*](https://orcid.org/0000-0003-3084-2527)

**Corresponding author’s email address and Twitter handle**

*Correspondence concerning this article should be addressed to Hong-jin Sun.*

*Email:* [*sunhong@mcmaster.ca*](mailto:sunhong@mcmaster.ca)

*1280 Main Street West, Hamilton, Ontario, Canada*

*905-525-9140 x26031*

**Keywords**

spatial attention; spatial cueing; reaction time; depth

**Abstract**

Attention has been shown to be modulated across depth in virtual 3D space. This modulation has demonstrated flexible distributions dependent on the task at hand. This dataset provides reaction time, error rates (or accuracy), and participant demographic details. X right-handed participants with normal or corrected-to-normal visual acuity and colour vision were collected with a mean age of XX (X male, Y female). All participants performed a classical abrupt target onset task requiring them to localize, discriminate a single target feature, or discriminate between two nearly identical stimuli. The reaction time and accuracy data were recorded in long data format per participant and appended to a joint file. This includes the raw and filtered data on separate spreadsheets. This dataset will be incredibly helpful in understanding how spatial attention can appear adaptive across 3D space in virtual and real-world contexts.

# SPECIFICATIONS TABLE

|  |  |
| --- | --- |
| **Subject** | *Experimental and Cognitive Psychology* |
| **Specific subject area** | *Spatial attention and the varying distribution across depth in virtual 3D space.* |
| **Data format** | Raw, Filtered |
| **Type of data** | Table, Chart |
| **Data collection** | *Data was collected using manual button press responses corresponding to target onsets within the virtual 3D space. Reaction time trials were excluded for times exceeding 1000ms for localization, 1500ms for easy discrimination, and 2000ms for hard discrimination. Any reaction time under 200ms was also excluded. Participants entire data was excluded if their overall error rate exceeded 15%.* |
| **Data source location** | *McMaster University SunLab computers and associated software.* |
| **Data accessibility** | ***Please note:*** *All raw data referred to in this article must be made publicly available in a data repository prior to publication. Please indicate here where your data are hosted (the URL must be working at the time of submission and editors and reviewers must have anonymous access to the repository):*  Repository name: TBD  Data identification number: *TBD*  Direct URL to data: **TBD**  Instructions for accessing these data: TBD |
| **Related research article** | *Pre-print will be posted to PsyArXiv when ready for submission to a journal. The citation will added here when ready.* |

# VALUE OF THE DATA

*This section states why these data are of value to the scientific community and provides your reasoning and context behind the generation of this dataset. Please* ***provide between 3 and 6 bullet points****, and answer at least the questions below (delete the questions afterwards). Each bullet point should be a maximum of 100 words long, and should not include conclusions or inferences:*

* This data will further the work in spatial attention allocation across depth
* This line of research has direct connections to the safety of human behaviour in circumstances such as driving, spatial navigation, or general depth perception
* Other researchers can continue to quantify the observed depth effects using various task sets in different environmental contexts

# DATA DESCRIPTION

*Folder: Data\_LDD*

*Files: ReactionTime\_LDD\_DataRaw, ReactionTime\_LDD\_DataFiltered, Accuracy\_LDD\_DataRaw, Accuracy\_LDD\_DataFiltered, LDD\_DemographicData*

All of these files are spreadsheets with the appropriate label headings at the top of every sheet. All variables are meant to be factors aside from Reaction Time, Accuracy, and Age, respectively.

Note: Filtered Data just removed the excluded trials based on the initial reaction time criteria.

# EXPERIMENTAL DESIGN, MATERIALS AND METHODS

*The experiment took place at McMaster University in the SunLab via room PC 213. The experiment was coded in a virtual 3D technology by WorldViz known as ‘Vizard’. The code uses an adapted python coding language to simulate realistic 3D conditions. (File to be attached when formed). Vizard gives text file outputs of the data that is columnized per participant that can be appended to form a joint csv or xlsx file. Here we will use csv.*

*CSV files will be obtained and used for analysis in Rstudio. Rstudio will be used to run ANOVAs, t-tests, simple main effect comparisons, associated Tukey Honest Significant Differences, and descriptive statistics (mean, standard error, confidence intervals). This file will be attached when formed, in both an R script and an R markdown file.*

# LIMITATIONS

*TBD.*

# ETHICS STATEMENT

*Data in Brief’s* [*Guide for Authors*](https://www.elsevier.com/journals/data-in-brief/2352-3409/guide-for-authors) *contains detailed information on the ethical guidelines with which all authors must comply. In addition, we ask you to complete the relevant statement(s) below. Please delete those which are not relevant for your data.*

***McMaster Research Ethics Board approved our study and consent was obtained prior to study onset by all participants. Protocol Number is 243 006.***

# CRediT AUTHOR STATEMENT

*Noah Britt: conceptualization, methodology, data curation, draft preparation, visualization, writing-reviewing and editing.*

*Hong-jin Sun: conceptualization, software, writing-reviewing and editing.*

# ACKNOWLEDGEMENTS

We like to thank Jackie Chau for his assistance in lab discussions relevant to this project.

NSERC funding was relevant to the current project.

# DECLARATION OF COMPETING INTERESTS

* The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

# REFERENCES

*In this section, please provide a numbered list of references. References are limited to* ***a maximum of 20*** *and irrelevant self-citation is not allowed.*

*Please format all in-text citations by number(s) in square brackets in line with the text. The actual authors can be referred to, but the reference number(s) must always be given.*

***IMPORTANT: If your data article supports an original research article, please cite the associated article here; ideally, it should be the first citation****.*

***Please also make sure to cite your dataset in the data repository.***

***TBD\*\****