Instructions

The information you provide here will be used by the YOUth project manager, the YOUth data manager, and the Data Management Committee to evaluate your data request. Details regarding this evaluation procedure can be found in the Data Access Protocol.

All approved data requests will have to be preregistered at the YOUth registry on the Open Science Framework . The OSF preregistration form consists of the same fields as the Study information fields in the data request form below. In addition, approved data requests will be published on the YOUth website, including the name and institution of the contact person and the participating researchers.

If you have compelling reasons to object to the preregistration and publication of the data request, you will be able to specify this in the data request form below. The objection will be evaluated by the project manager, executive board and the data management committee. If the objection is rejected, you may decide to withdraw your data request.

Please note that data requests that include biological materials will need to go through an additional phase after the general online data request procedure: these requests will have to be approved by the UMC Utrecht Review Committee Biobanks (Toetsingscommissie Biobanken, TCBio).

Part 1

Researcher details, data overview, and publication

Researcher details

In this section, please provide information about the researchers involved with this data request.

- Name, affiliation and contact information of the principal investigator
- Name, affiliation and contact information of the contact person for this request
- Name and details of participating researchers (e.g. intended co-authors)
- A comma-separated list of email addresses which should receive a CC of all email correspondence regarding this data request.

Principal investigator of the proposed study:	
Name:	Prof. dr. Alexandru Telea
Institution:	Utrecht University
Department:	Department of Information and Computing Science
Address:	Princetonplein 5, 3584CC Utrecht
Email:	a.c.telea@uu.nl
Phone:	+31 (30) 253 4170

Contact person of the proposed study (if different from the principle investigator):	
Name:	Roy Hessels
Institution:	Utrecht University
Department:	Experimental Psychology
Address:	Heidelberglaan 1, 3584 CS, Utrecht

Email:	r.s.hessels@uu.nl
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Participating researcher:	
Name:	
Institution:	
Department:	
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Participating researcher:	
Name:	
Institution:	
Department:	
Address:	
Email:	
Phone:	

List of CC email-addressed (comma-separated)

Requested data

In this section, please specify as detailed as possible which data you request from which cohort (Baby and Child and/or Child & Adolescent) and which wave(s). If applicable, please also list any specific criteria (e.g. only data of children of whom mothers smoked during pregnancy)

Cohort(s)	Baby & Child
Wave(s)	5mo, 10mo, 3y

Data	20 random sets of infant face pop out experiment.
Specific criteria	None.

Publication of results

Please indicate how the results of the proposed project will be published:

☐ Article or report in a peer-reviewed journal
☐ (Part of a) PhD thesis
☐ (Part of a) PhD thesis that will also be published in a peer-reviewed journal
☒ Other:

Results will not be published.

Agreement on publication of the request

Please indicate whether you agree with your complete request being published on our website after approval:

☐ I agree
☒ I don't agree (please explain why not)

Data will only be used to test visualization techniques. No publication of results is planned.

Part 2

Study information

Title of the study

Please provide the title of your study

Testing data visualization techniques on eye-tracking data

Research questions

Please list each research question included in this study.

When specifying your research questions, it is good practice to use only two new concepts per research question. For example, split up your questions into a simple format: "Does X lead to Y?" and "Is the relationship between X and Y moderated by Z?". By splitting up the research questions here, you can more easily describe the statistical test for each research question later.

Do the trail-bundling visualization techniques yield potentially useful visualizations for the YOUth eye tracking data, in particular the Infant Face Popout experiment?

The overall goal of this study is to gauge the feasibility of using trail-bundling visualization techniques (already developed in the past by prof. Telea) to process the eye-tracking data produced in the YOUth project. Based on the insights obtained in this feasibility study, we aim next to propose both modifications of the trail-bundling visualization techniques, and also concrete use-cases of these visualization applications, that will lead to added value propositions for researchers and/or other stakeholders involved with the YOUth data. Based on these propositions, further concrete research projects or actions can be defined.

Hypotheses

For each of the research questions listed in the previous section, provide one or more specific and testable hypothesis.

Please make clear whether the hypotheses are directional (e.g., A > B) or non-directional (e.g., A ≠ B). If directional, state the direction. You may also provide a rationale for each hypothesis.

For this and all the following questions, the answer is N/A, since the aim of the current study is simply explorative – finding out whether the proposed bundling visualization techniques can, first of all, handle the kind of data produced by YOUth (see details in the answer to the previous point).

Variables

Describe all variables that will be used as IVs (predictors), DVs (outcomes), or covariates in your study.

Label them accordingly. If you are using a scale or an index, state the construct the scale/index represents, which items the scale/index will consist of, and how these items will be aggregated. When the aggregation is based on exploratory factor analysis (EFA) or confirmatory factor analysis (CFA), also specify the relevant details (EFA: rotation, how the number of factors will be determined, how best fit will be selected, CFA: how loadings will be specified, how fit will be assessed, which residuals variance terms will be correlated). If you are using any categorical variables, state how you will code them in the statistical analyses.

All available eye-tracking measures might be used (#fixations, fixation time, fixation location, saccade direction, saccade amplitude, etc.)

Unit of analysis

Which units of analysis (respondents, cases, etc.) will be included or excluded in your study?

Taking these inclusion and exclusion criteria into account, indicate the expected sample size of the data you'll be using for your statistical analyses. If you have a research question about a certain group you may need to exclude participants based on one or more characteristics. Be very specific when describing these characteristics so that reders will be able to redo your moves easily.

N/A

Missing data

How will you deal with incomplete or missing data?

Provide descriptive information, if available, on the amount of missing data for each variable you will use in the statistical analyses. Based on this information, provide a new expected sample size.

N/A

Statistical outliers

How will you define what a statistical outlier is in your data and what will you do when you encounter them?

If you plan to remove outliers, provide a new expected sample size. If you expect to remove many outliers or if you are unsure about your outlier handling strategy, it is good practice to preregister analyses including and excluding outliers. Note that this will be the definitive expected sample size for your study and you will use this number to do any power analyses.

N/A

Knowledge of data

Prior publication/dissemination

List the publications, working papers, and conference presentations you have worked on that are based on the dataset you will use.

For each work, list the variables you analyzed, but limit yourself to variables that are relevant to the proposed analysis. If the dataset is longitudinal, also state which wave of the dataset you analyzed. Specify the previous works for each co-author separately.

N/A

Prior knowledge

Disclose any prior knowledge you may have about the dataset that is relevant for the proposed analysis. If you do not have any prior knowledge of it, please state so.

Your prior knowledge could stem from working with the data first-hand, from reading previously published research, or from codebooks. Provide prior knowledge for every author separately. Indirect knowledge about the hypothesized association does not preclude a confirmatory analysis but should be transparently reported in this section. However, direct knowledge about the association between the variables in your hypothesis may indicate that you are unable to make unbiased analytic decisions to test this hypothesis.

N/A

Analyses

Statistical models

For each hypothesis, describe the statistical model you will use to test the hypothesis.

Include the type of model (e.g., ANOVA, multiple regression, SEM) and the specification of the model. Specify any interactions and post-hoc analyses and remember that any test not included here must be labeled as an exploratory test in the final paper.

N/A

Effect size

If applicable, specify a predicted effect size or a minimum effect size of interest for all the effects tested in your statistical analyses.

N/A

Statistical power

Present the statistical power available to detect the predicted effect size or the smallest effect size of interest. Use the sample size after updating for missing data and outliers.

N/A

Inference criteria

What criteria will you use to make inferences?

Describe the information you will use (e.g. specify the p-values, effect sizes, confidence intervals, Bayes factors, specific model fit indices), as well as cut-off criteria, where appropriate. Will you be using one-or two-tailed tests for each of your analyses? If you are comparing multiple conditions or testing multiple hypotheses, will you account for this, and if so, how?

The usefulness of the visualization techniques will be subjectively assessed. If deemed useful, follow-up projects may be started for which new data requests will be submitted.

Assumption violation/Model non-convergence

What will you do should your data violate assumptions, your model not converge, or some other analytic problem arises?

N/A

Reliability and robustness testing

Provide a series of decisions or tests about evaluating the strength, reliability, or robustness of your finding.

This may include within-study replication attempts, additional covariates, cross-validation, applying weights, selectively applying constraints in an SEM context (e.g., comparing model fit statistics), overfitting adjustment techniques used, or some other simulation/sampling/bootstrapping method.

N/A

Exploratory analysis

If you plan to explore your dataset to look for unexpected differences or relationships, describe those tests here.

If reported, add them to the final paper under a heading that clearly differentiates this exploratory part of your study from the confirmatory part.

N/A