

Preferred Evaluation of Cognitive And Neuropsychological Studies: The PECANS statement for human studies

Title of the Study: Why Do We Confuse Fear with Surprise? A Preliminary Kinematic Investigation of Dynamic Facial Expressions of Spontaneous and Posed Fear and Surprise.

Authors: Cristina Scarpazza, Elisa Straulino, Luisa Sartori, Fiorella Del Popolo Cristaldi

Type of study: Traditional study

Date: 11/Jul/2025

INTRODUCTION

1. Did you report the rationale of the study in light of available literature?

Yes

2. Did you report the aims of the study?

Yes

3. Did you report whether your study is exploratory, hypothesis driven, direct replication?

Yes

4. In the case of hypothesis driven data, did you clarify the expected results or listed the hypotheses of the study and the directionality? Have you made clear what outcomes would disconfirm the hypothesis?

Yes

METHODS

Pre-registration

5. Did you report whether the study has been pre-registered before data collection and analyses?

No

Study design

6. Did you state the type of study? Whether the study is correlational (including epidemiological or quasi-experiment) or a true experiment? Longitudinal or cross-sectional?

Yes

7. Did you report whether the study is a between-participants, within-participants, or mixed study?

Yes

8. In a within-participants design, did you report the control conditions and counterbalancing?

Yes

9. Did you report if there is a control group? If so,

N/A

10. Is the experiment single blind or double blind?

N/A

Participants

11. Did you perform an a priori power analysis to determine sample size?
No
- 11.2 If not, did you justify your sample size in another way?
Yes
12. Did you report the population(s) from which you sampled?
Yes
13. Did you report whether the data included are novel data or part of data included in other articles already published (part of an entire datasets)?
Yes
14. Did you report demographic information or other information for each group that may be relevant for your research? Example: gender (m, f, other), age (years, min/max, mean, SD), education, handedness, ethnicity, etc.?
Yes
15. Did you report how the participants of the study have been recruited?
Yes
16. Did you report the criteria of inclusion/exclusion? Did you report whether inclusion/exclusion criteria were established prior to data analysis?
Yes
17. Did you report whether any form of compensation was given to the participants (money, exam credits, no reward)?
N/A
18. In case of clinical research, did you report the diagnostic criteria selected (e.g., DSM-5), the instruments used to corroborate diagnosis (e.g., SCID-PD) and specific characteristics of the participants included (e.g., pharmacotherapy, disease duration)?
N/A
19. Did you report how many participants have been tested, the number and reasons for any exclusions, and the final numbers included in each statistical analysis?
Yes

Ethical issues

20. Did you report if individual informed consent was obtained?
Yes
- 20.1 If yes, if deception was used in the study, did you explicitly report this?
N/A
21. Did you report if the study has been approved by an ethical committee?
Yes

Apparatus, Instrumentation, and Study Setting

22. Did you report if the data collection has been done online or in person?
Yes
23. Did you report the software and hardware (where relevant for the study) used for task presentation and response acquisition?
Yes
24. If you performed an experimental task and a neuropsychological battery or questionnaires, did you report whether all the evaluation were performed on the same day?
Yes

25. Did you describe those characteristics of the experimental setting that, if manipulated, might modulate the size of the effect(s) under investigation (e.g., type of screen, room illumination, distance from the monitor, if the experimenter stays in the room, if the experimenter is a peer or an authoritative person)?
Yes

METHODS - EXPERIMENTAL TASK

26. Did you administer any experimental task?

Yes

26.1 Did you describe the task to perform (i.e., what the participants are asked to do in sufficient detail so that others could replicate the task; for instance in an emotion experiment from faces, participants are asked to categorize emotions or gender)?
Yes

26.2 Did you describe those characteristics of the stimuli that, if manipulated, might modulate the size of the effect(s) under investigation (e.g., size, colour, eccentricity in visual angle, sound intensity in dB etc.)?
Yes

26.3 Did you make explicit all the experimental and control conditions and counterbalancing (if applicable)?
Yes

26.4 Did you report the number of blocks, the number and length of breaks, the total duration of the experiment?
Yes

26.5 Did you report the number of practice trials and experimental trials, the number of stimuli per block, the trial timeline (e.g., inter-stimulus interval; duration of black screen, stimulus duration) and if trials are random, pseudo-random, or fixed?
Yes

26.6 Did you report how the instructions before the task were given (i.e. written or orally; in a standardized way or not)?
No

26.7 Did you report all variables collected (e.g., RT, accuracy, errors)?
Yes

26.8 Did you report the response effector (e.g., verbal, feet, hand, left/right side, which fingers)?
Yes

26.9 Did you report if there is a response feedback or any response-contingent reward?
N/A

METHODS - (NEURO)PSYCHOLOGICAL TESTS

27. Did you administer any (neuro)psychological tests?

No

METHODS - QUESTIONNAIRES

28. Did you administer any questionnaires?

No

STATISTICAL ANALYSIS

29. Did you describe the statistical method used for all analyses and the nature of inference (e.g., null hypothesis testing, interval estimation, Bayesian analysis, predictive modelling)?
Yes

30. Did you report the relevant information for each analysis (e.g., the structure of the models, the methods used for hypothesis testing, the nature of priors for Bayesian analysis, and the nature of any feature selection and cross-validation operations used for machine learning analyses)?

Yes

31. Did you report all dependent and independent variables (including covariates)?

Yes

32. For online studies, did you report all data cleaning procedures (e.g., removal or duplicate or automated bot responses)?

N/A

33. Did you report whether outlier analysis was performed and, if yes, of what type (e.g., multivariate outliers, influential cases) and at what level of the data?

No

34. Did you report if any trials (e.g., practice trials, errors outliers, too-fast or too-slow responses) were excluded from the analysis and why, and to what percentage the excluded trials amounted to?

N/A

35. Did you report how missing data (e.g., dropouts) were handled?

N/A

36. Did you report how many statistical tests were performed (including subgroups analyses)? If more than one, have you specified whether indices of evidence (e.g., p-value, CIs) were adjusted for multiple comparisons and how (e.g., Bonferroni, False Discovery Rate correction)?

Yes

RESULTS

37. Did you report descriptive analyses of dependent variables, including demographics: mean and standard deviation (or median and range, etc)?

Yes

38. Did you report effect sizes for all effects tested (including confidence intervals or other uncertainty indices)?

Yes

39. Is it clear in your analysis how your main hypotheses were tested? Can readers easily extract an effect size and statistic for each hypothesis you said you were testing (e.g., to include in a meta-analysis)?

Yes

40. Did you report all the exact (i.e., not just $p < 0.05$) main statistics (e.g., F-values for ANOVA, degrees of freedom, r for correlation, Bayes factor for Bayesian analysis) for all tested effects (including main effects, interactions, post hoc analyses)?

Yes

41. Did you also report non-significant results?

Yes

42. For images and tables: did you plot or reported the effects and the uncertainty indices (e.g., CI, or standard error) and make clear in the figure captions which units of uncertainty are reflected in any error bars?

Yes

DISCUSSION

43. Did you summarize and explain the results, also the ones in contrast with the hypotheses, in relation to the hypotheses and the aims of the study (irrespective of potential limitations)?

Yes

44. In the case of direct replication, did you make clear whether the original results were replicated or not, and which type of replication has been performed?

N/A

45. Did you discuss the results taking into consideration the evidence and literature in agreement and disagreement with the findings?

Yes

46. Did you discuss the limitations of the work (reporting potential bias, e.g., bias of inclusion/sex; limitations on generalizability of the results)?

Yes

ADDITIONAL INFORMATION

47. Did you mention the contributions of all collaborators (e.g., following the CRediT taxonomy)?

Yes

48. Did you disclose any conflict of interest (including relevant grants)?

Yes

DATA AVAILABILITY

49. Did you report whether the materials of the experiment (i.e., task, instructions given to the participants; stimuli relevant for the experiment; video of the experimental procedure) are freely available, available upon request, or not available?

Yes

49.1 Did you provide the link to the material?

No

50. Did you report whether the data are freely available, available upon request, or not available?

Yes

50.1 If available, did you describe the variables included in the dataset and instructions on how the data are structured?

No

50.2 Did you provide the link to the material?

Yes

50.3 Did you make clear to whom requests for data/materials are to be directed and why?

N/A

51. Did you report whether the code/script to perform statistical analyses is freely available/ available upon request /not available?

Yes