

Parent Application:ER/BMT26/5

| | |
|----------------------------------|--|
| Project Title | [Amendment] Validation of a Gamified Measure of Processing Speed |
| Status | Draft |
| Email | bmt26@sussex.ac.uk |
| Phone No. | |
| Applicant Status | PG (Taught) |
| Department | Psychology |
| Supervisor | Makowski, Dominique |
| Project Start Date | 10-Oct-2024 |
| Project End Date | 10-Oct-2025 |
| External Funding in place | No |
| External Collaborators | No |
| Funder/Project Title | |
| Name of Funder | |

Ethical Review Application ER/BMT26/6 (continued)

Project Description

This application constitutes an amendment to the previously approved study (ER/BMT26/5), for the addition of implementing Raven's Progressive Matrices to assess convergent validity.

The present study seeks to validate and optimize a simple reaction time task by (1) testing the impact of gamification on processing speed and task engagement and (2) assessing the optimal parameter values (number of trials and ISI range) for a robust yet efficient measure.

The procedure involves the following phases:

- Consent form: Before the experiment begins, participants will have an opportunity to read through information about the study. Participants will be informed that their response and participation will be kept confidential and anonymous (no IP address, or any identifiers are collected), and that the anonymised dataset may be made available for use of other researchers. Participants will have the opportunity to withdraw consent at the end of the experiment.
- Demographic information: A standard demographic survey will be presented to participants, including questions about age, gender, self-described ethnicity and education level. The goal is to be able to describe the sample with fidelity to prevent over-generalization of the results.
- Task: Participants will complete a simple reaction time task in two versions (presented in a randomized order): basic and gamified. The basic version will consist of a simple RT task with a red square appearing on the screen, and participants will be asked to press a key as quickly as possible. The gamified version will be a similar task but with gamified graphics, mechanics and a narrative (a dog that must get bones as fast as possible).
- Post-task questionnaires: After each task, participants will be asked how long they feel the task lasted and how happy they would be to repeat it.
- Convergent validity measure: Participants will complete a 9-item Raven's progressive matrices (Bilker et al., 2012) which is used to assess fluid intelligence.
- Risks: There are no risks involved in this study.

Ethical Review Form Section A (ER/BMT26/6)

| Question | Response |
|--|----------|
| >> Checklist | |
| A1. Will your study involve participants who are currently or potentially vulnerable or unable to give informed consent or in a dependent position (e.g. people under 18, people with learning difficulties, over-researched groups or people in care facilities)? | No |
| A2. Will participants be required to take part in the study without their consent or knowledge at the time (e.g. covert observation of people in non-public places), and / or will deception of any sort be used? Please refer to the British Psychological Society Code of Ethics and Conduct (or similar guidelines) for further information. | No |
| A3. Unless specifically and clearly consented (e.g. a media release form), will it be possible, through a research output, to identify participants in any way? (This does not include taking email details for participant prize draws or identifying participants from signed consent forms or holding identity encryption spreadsheets that are stored securely separate from the research data). | No |
| A4. Might the study induce psychological stress or anxiety, or produce humiliation or cause harm or negative consequences beyond the risks likely to be encountered in the everyday life of the participants? | No |
| A5. Is there a risk that the research topic might lead to disclosures from the participant concerning their beliefs, involvement in illegal actions or any other activities that may represent a threat to themselves or others? | No |
| A6. Will the study involve collecting any personal special category information* in a form that could allow the participant/ participants to be identified? [* identifiers relating to race, ethnic origin, politics, religion, trade union membership, philosophical beliefs, genetics, biometrics, health, sex life or sexual orientation] | No |
| A7. Will any drugs, placebos or other substances (such as food substances or vitamins) be administered as part of this study and will any invasive or potentially harmful procedures of any kind will be used? | No |
| A8. Will your project involve working with any substances and / or equipment which may be considered hazardous? | No |
| A9. Will your study involve the taking and/or storage of human tissue that falls under the Human Tissue Act (HTA)? http://www.sussex.ac.uk/staff/research/governance/erp_overview/humantissue | No |
| >> Risk Assessment | |
| A10. If you have answered Yes to ANY of the above questions, your application may be considered as HIGH risk. If, however you wish to make a case that your application should be considered as LOW risk please enter the reasons here. Researchers should note that SREOs or C-RECs may decide NOT to agree with the case that you have made. | |

| Ethical Review Form Section B (ER/BMT26/6) | |
|---|---|
| Question | Response |
| >> Data Collection and Analysis (Please provide full details) | |
| B1. PARTICIPANTS: How many people do you envisage will participate, who are they, and how will they be selected? | Study will attempt to recruit a minimum of 30 participants (based on typical samples of similar studies), with the only inclusion criteria being fluency in English. |
| B2. RECRUITMENT: How will participants be approached and recruited? | Participants will be recruited via convenience sampling (e.g., via social media), or via other recruitment platforms if available (e.g., SONA, Prolific). The samples from different methods of recruitment will be collected separately in case they are different (the incentive type - e.g., student credits - and amount - or lack thereof - will thus be known to mitigate its potential effect). As we aim at recruiting a diverse sample, the only inclusion criteria is fluency in English. |
| B3. METHOD: What research method(s) do you plan to use; e.g. interview, questionnaire/self-completion questionnaire, field observation, audio/audio-visual recording? | The study will be completed online and involves some self-completion questions |
| B4. LOCATION: Where will the project be carried out e.g. public place, in researcher's office, in private office at organisation? | Online |
| B5. PARTICIPANT WELLBEING: Will the study involve engaging participants in the discussion of potentially distressing or sensitive topics? (e.g. sexual activity, drug use, ethnicity, political behaviour, potentially illegal activities). If so, please set out how you will manage the well-being of participants. | No |
| >> Confidentiality and Anonymity | |
| B6. Will questionnaires be completed anonymously and returned indirectly? | Yes |
| B7. Will research data only be identifiable by a unique identifier (e.g. code/pseudonym)? If Yes, please explain how this will be attributed in B11a below. | Yes |
| B8. Will lists of identity numbers or pseudonyms linked to names and/or addresses be stored securely and separately from the research data? If Yes, explain how this will occur in B11a below. | N/A |
| B9. Will all place names and institutions which could lead to the identification of individuals or organisations be changed unless this is consented to explicitly in the consent form? | Yes |
| B10. Will all personal information gathered be treated in strict confidence and never disclosed to any third parties? | Yes |
| B11. Can you confirm that your research records will be held in accordance with data protection regulations? (http://www.sussex.ac.uk/ogs/policies/information/dpa) | Yes |
| B11a. Please explain how ANY identifiable personal and/or research data will be managed and securely stored ensuring that participants have given appropriate informed consent for this. | The study is anonymous; names will not be collected |

| | |
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| B12. Do you intend to use the research data for any purpose other than that for which consent is explicitly given? If so, please explain below | No |
| B12a. If you answered NO to any of the above in this section (or think more information could be useful to the reviewer) please explain here: | Potential for anonymous data sharing is included in the consent. |
| >> Informed Consent and Recruitment of Participants | |
| B13. Will all respondents be given an Information Sheet and be given adequate time to read it before being asked to agree to participate? | Yes |
| B14. Will all participants taking part in an interview, focus group, observation (or other activity which is not questionnaire based) be asked to sign a consent form? If you are obtaining consent another way (such as verbally), please explain under B17 below. | N/A |
| B15. Will all participants self-completing a questionnaire be asked to show consent to participate by a specific and identifiable action? (Give details in B17 below) | Yes |
| B16. Will all participants be told that they can withdraw their participation at any time during the research and can ask for their data to be destroyed and/or removed from the project until it is no longer practical to do so? | Yes |
| B17. If you answered NO to any of the above in this section (or think more information will be useful to the reviewer) please explain here: | Participants will be asked to click a box confirming their consent. |
| >> Context | |
| B18. Is DBS (Disclosure and Barring Service) clearance necessary for this project? If yes, please ensure you complete the next question. | No |
| B19. Are any other ethical clearances or permissions (internal or external) required? Please see the help text (i) for further details. | No |
| B19a. If yes, please give further details including the name and address of the organisation. If other ethical approval has already been received please attach evidence of approval, otherwise you will need to supply it when ready. (You do not need to provide evidence of a current DBS check at this point). | |
| B20. Does the research involve any fieldwork - Overseas or in the UK? | No |
| B20a. If yes, where will the fieldwork take place? If undertaken overseas you must attach an OTSSRA form. In the event that the Foreign and Commonwealth Office has specific travel warnings in place for the country (ies) to be visited you will also need to provide a detailed risk assessment. https://www.gov.uk/foreign-travel-advice | |
| B21. Will any researchers be in a lone working situation? | No |
| B21a. If yes, briefly describe the location, time of day and duration of the lone working. What precautionary measures will be taken to ensure safety of the researcher(s)? | |

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|---|----|
| >> Any further concerns | |
| B22. Are there any other ethical considerations relating to your project which have not been covered above? | No |
| B22a. If yes, please explain: | |

Parent Application:ER/BMT26/4

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|----------------------------------|--|
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| Email | bmt26@sussex.ac.uk |
| Phone No. | |
| Applicant Status | PG (Taught) |
| Department | Psychology |
| Supervisor | Makowski, Dominique |
| Project Start Date | 10-Oct-2024 |
| Project End Date | 10-Oct-2025 |
| External Funding in place | No |
| External Collaborators | No |
| Funder/Project Title | |
| Name of Funder | |
| Project Description | <p>The present study seeks to validate and optimize a simple reaction time task by (1) testing the impact of gamification on processing speed and task engagement and (2) assessing the optimal parameter values (number of trials and ISI range) for a robust yet efficient measure.</p> <p>The procedure involves the following phases:</p> <ul style="list-style-type: none">- Consent form: Before the experiment begins, participants will have an opportunity to read through information about the study. <p>Participants will be informed that their response and participation will be kept confidential and anonymous (no IP address, or any identifiers are collected), and that the anonymised dataset may be made available for use of other researchers.</p> <p>Participants will have the opportunity to withdraw consent at the end of the experiment.</p> <ul style="list-style-type: none">- Demographic information: A standard demographic survey will be presented to participants, including questions about age, gender, self-described ethnicity and education level. The goal is to be able to describe the sample with fidelity to prevent over-generalization of the results.- Task: Participants will complete a simple reaction time task in two versions (presented in a randomized order): basic and gamified. <p>The basic version will consist of a simple RT task with a red square appearing on the screen, and participants will be asked to press a key as quickly as possible.</p> <p>The gamified version will be a similar task but with gamified graphics, mechanics and a narrative (a dog that must get bones as fast as possible).</p> <ul style="list-style-type: none">- Post-task questionnaires: After each task, participants will be asked how long they feel the task lasted and how happy they would be to repeat it.- Risks: There are no risks involved in this study. |

Ethical Review Form Section A (ER/BMT26/5)

| Question | Response |
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| >> Checklist | |
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| B21. Will any researchers be in a lone working situation? | No |
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| | |
|---|----|
| >> Any further concerns | |
| B22. Are there any other ethical considerations relating to your project which have not been covered above? | No |
| B22a. If yes, please explain: | |

Informed Consent

Invitation to Take Part

Thank you for considering to take part in this study conducted by Benjamin Tribe and Dr Dominique Makowski from the University of Sussex (see contact information below).

Why have I been invited and what will I do?

The goal is to study experience and performance on two different presentations of a simple reaction time task. The whole experiment will take you **DURATION ESTIMATE TBC** to complete. Please make you sure that you are **attentive and in a quiet environment**, and that you have time to complete it in one go.

What will happen to the results and my personal information?

The results of this research may be written into a scientific publication. Your anonymity will be ensured in the way described in the consent information below. **Please read this information carefully** and then, if you wish to take part, please acknowledge that you have fully understood this sheet, and that you consent to take part in the study as it is described here.

Consent

- I understand that by signing below I am agreeing to take part in the University of Sussex research described here, and that I have read and understood this information sheet
- I understand that my participation is entirely voluntary, that I can choose not to participate in part or all of the study, and that I can withdraw at any stage without having to give a reason and without being penalized in any way (e.g., if I am a student, my decision whether or not to take part will not affect my grades).
- I understand that since the study is anonymous, it will be impossible to withdraw my data once I have completed it.
- I understand that my personal data will be used for the purposes of this research study and will be handled in accordance with Data Protection legislation. I understand that the University's Privacy Notice provides further information on how the University uses personal data in its research.
- I understand that my collected data will be stored in a de-identified way. De-identified data may be made publicly available through secured scientific online data repositories.
- By participating, you agree to follow the instructions and provide honest answers. If you do not wish to participate or if you don't have the time, simply close your browser.

For further information about this research, or if you have any concerns, please contact Benjamin Tribe (bmt26@sussex.ac.uk) or Dr Dominique Makowski (D.Makowski@sussex.ac.uk). This research has been approved (ER/BMT26/5) by the ethics board of the School of Psychology. The University of Sussex has insurance in place to cover its legal liabilities in respect of this study.

Debriefing

The purpose of this study was to investigate the validity and effect of a gamified simple reaction time task on engagement and performance. Specifically, we want to see whether individuals performed similarly across the two versions of the task, and to test the hypothesis that gamification would lead to reduced variability (i.e., more consistency) in individuals reaction times, and greater enjoyment ratings than the non-gamified version.

Thank you! Your participation in this study will be kept completely confidential. If you have any questions or concerns about the project, please contact Benjamin Tribe (bmt26@sussex.ac.uk) or Dr Dominique Makowski (D.Makowski@sussex.ac.uk)

To complete your participation in this study, click on 'Continue' and **wait until your responses have been successfully saved** before closing the tab.

Continue

Demographic Questions

What is your gender? *

☐ Male ☐ Female ☐ Other

Please enter your age (in years) *

e.g., 21

What is your handedness? *

☐ Left-handed ☐ Right-handed ☐ Ambidextrous

Next

You selected 'Other' as your gender. Specify if you wish.

Gender

Note: The above question appears only for participants who select 'Other' for the Gender question.

What is your highest completed education level? *

☐ University (doctorate)

☐ University (master)

☐ University (bachelor)

☐ High school

☐ Elementary school

☐ Other

Previous

Next

What is your discipline?

- ☐ Arts and Humanities
- ☐ Literature, Languages
- ☐ History, Archaeology
- ☐ Sociology, Anthropology
- ☐ Political Science, Law
- ☐ Business, Economics
- ☐ Psychology, Neuroscience
- ☐ Medicine
- ☐ Biology, Chemistry, Physics
- ☐ Mathematics, Physics
- ☐ Engineering, Computer Science
- ☐ Other

Previous

Next

Note: The above question appears only for participants who selected one of the University options for the education level question.

Are you currently a student? *

Yes

No

Note: The above question appears only for participants who selected Master, Bachelor or High School for the education level question.

How would you describe your ethnicity?

- ☐ White
- ☐ Black
- ☐ Hispanic/Latino
- ☐ Middle Eastern/North African
- ☐ South Asian
- ☐ East Asian
- ☐ Southeast Asian
- ☐ Mixed
- ☐ Prefer not to say
- ☐ Other

In which country are you currently living?

e.g., France



Previous

Continue

Post experiment questions

How much did you enjoy the previous task? *

Boring  Fun

Without checking the time, how long do you think you spent doing the previous task? *

Time in minutes (e.g., 6.5)

How would you feel if you had to do the same task again one more time? *

Very  Very happy
annoyed

Continue

It is the end of the experiment! Don't hesitate to leave us feedback.

After clicking 'Continue', your data will be saved on our secure servers. We will then provide you with more information about the study.

Continue

Non-gamified Simple RT Task

In this experiment, a fixation cross (+) will appear in the center of the screen, followed by a red square.

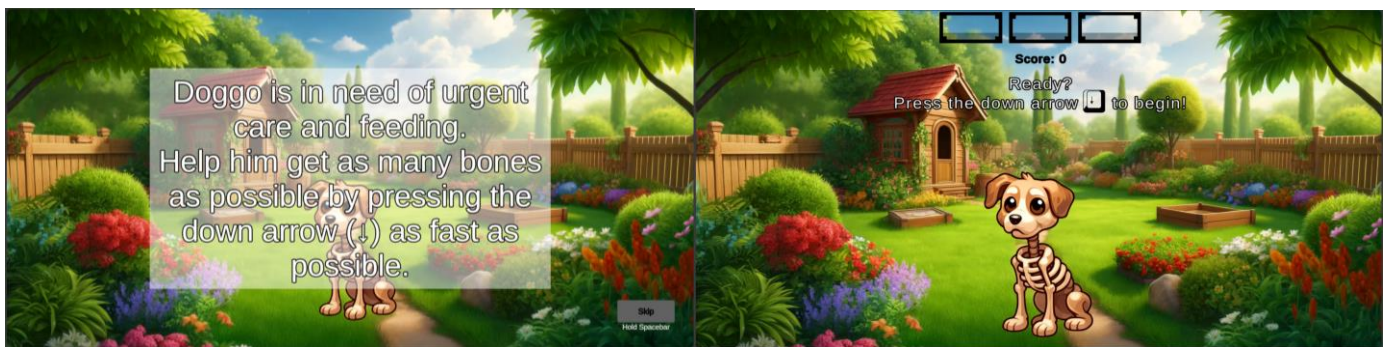
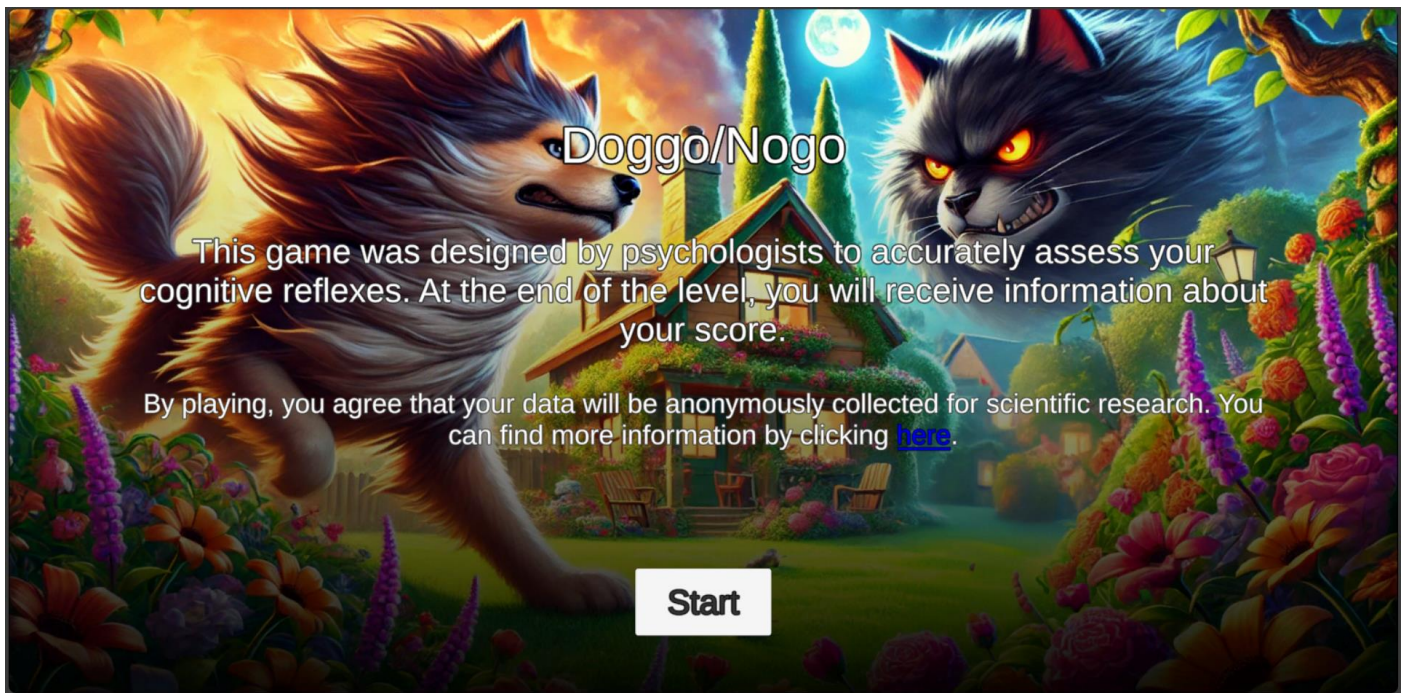
Whenever the red square appears, press the **Down Arrow** as fast as you can.



Press the **down arrow** to begin.



Gamified Simple RT Task



Participants receive feedback on each trial as well as if they respond prematurely:



Participants needed!

We aim to compare individuals performance on two versions of a simple reaction time task. All you have to do is press a key on your keyboard each time a particular stimulus appears.

You can complete the experiment online at your convenience, and you will be compensated for your time with cash or course credits.

To participate you must:

- Be fluent in English
- Have access to a computer in a distraction-free environment



[QR CODE TO
STUDY
GOES HERE]



Can't scan the QR?
Find the experiment at: [URL GOES HERE](#)
Email Benjamin Tribe (bmt26@sussex.ac.uk) or
Dominique Makowski (D.Makowski@sussex.ac.uk) if
you have any further questions.

US
UNIVERSITY
OF SUSSEX

Raven's Progressive Matrices

We are beginning the **puzzle task**.

In this task, you will be shown a series of puzzles. For each puzzle, your goal is to identify the missing piece from the options appearing below the puzzle.

< Prev

Next >

There are 9 puzzles in total. You will have **30 seconds** for each puzzle.

Try to be as accurate as you can be. If you cannot solve the puzzle before time runs out, then you should guess.

Press the "next" button to get started.

< Prev

Next >

