**ERGO II Ethics application form – Psychology Committee**

1. **Applicant Details**

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| **1.1 Applicant name** | James W. Butterworth |
| **1.2 Supervisor** | Dr. Nicholas J. Kelley |
| **1.3 Other researchers / collaborators (if applicable):** *Name, address, email* |  |

1. **Study Details**

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| **2.1 Title of study** | Sleep Quality and the Self (Daily Diary) |
| **2.2 Type of project** (e.g. undergraduate, Masters, Doctorate, staff) | Doctorate |

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| **2.3 Briefly describe the rationale for carrying out this project and its specific aims and objectives.** |
| Current literature directly exploring the relationship between sleep quality and various concepts of the self is limited. Prior research has focused primarily on Sleep Quality and Self-Esteem, or Sleep Quality and Self-Control; beyond this, various self-concepts (such as Self-Compassion, or Self-Continuity) is lacking; having only been explored as a covariate or ignored altogether. Due to the sheer number of measures of self and identity, there is no leading theory behind the relationship between sleep quality and the self. The present researchers have thus far completed 3 of 4 planned studies which aim to investigate the relationship between sleep quality and multiple self-constructs.  The first study (ERGO No.: 54014) explored the correlational relationships between sleep quality and a multitude of self-concepts; including previously unexplored measures and those with limited or ambiguous research. We found strong links between sleep quality and many self-constructs. The 4 self-constructs with the strongest links to sleep-quality were highlighted and recorded for the following research. This research provided the foundations for further in-depth exploration of these topics and provide valuable insight into the link between sleep and identity.  Following this, we completed a second study (ERGO No.: 60427\_V4) which looked precisely at the 4 self-constructs that revealed the greatest effects in Study 1: self-compassion, self-control, self-esteem, and self-continuity. This study was a longitudinal study (*daily diary*) exploring how changes in these self-constructs over time influences variation in sleep-quality. Interestingly, and contrary to expectation, we found trait (but not state) effects of these self-constructs on sleep-quality.  Our latest study (ERGO No.: 60427\_V7) aimed to replicate study 2 with but with an additional behavioural manipulation. We hypothesised that the reason for the missing state effects in Study 2 was due to a lack of situational necessity for changes in these self-constructs. Therefore, we asked participants to consciously attempt to increases 1 of 3 previously studied self-constructs every day for 10 days. Data is yet to be analysed, but we expect to find that participants show improved sleep quality on days where they increase their assigned self-construct.  Now, we aim to complete study 4 of 4. This study will follow a similar design to that of studies 2 and 3, insofar as the participants will complete a short survey every day for 2 weeks. However, study 4 will additionally aim to explore objective data. To do this, participants will wear an “acti-watch”, which will record their sleep quality (e.g. sleep duration, sleep-depth, etc) for the duration of this study. This will allow us to ultimately present our conclusive findings across all 4 studies, accounting for both objective and subjective measures of sleep quality. |

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| **2.4 Provide a brief outline of the basic study design. Outline what approach is being used and why.** |
| As before, the present study will use an online *daily diary* approach to explore changes in self-reported feelings of the self (self-compassion; self-control; self-esteem; self-continuity) over the course of two weeks. We will explore how daily variations in these self-constructs influence nightly sleep quality. If analysis allows, we additionally may consider the reverse direction: how the role of sleep quality influences this variation. Participants will be recruited as part of a previous (unrelated) study. Following the previous study (ERGO No.: 68828) participants will be given the opportunity to take part in the present research. Thus, we will use *eFolio* to recruit participants, and *Qualtrics* to distribute and collect data. The present research is a longitudinal study whereby participants will complete a brief (5 minute) daily questionnaire for 7 days, in which they will report their subjective feelings of various constructs of the self (using both state and trait measures). Participants will also be asked to wear an acti-watch for the duration of the study. The survey will obtain subjective information about the participants' nightly sleeping habits, and daily behaviours of self-control, self-esteem, self-compassion, and self-continuity. The acti-watch will obtain objective data regarding the participants’ sleep quality (e.g., movement, depth of sleep, duration of sleep, etc.). The results of this research will provide valuable insight into the effects of daily self-related behaviours on objective markers of sleep quality. |

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| **2.5 What are the key research question(s)? Specify hypotheses if applicable.** |
| What is the association between objective markers of sleep quality and the self?  Previous research in our laboratory employing daily diary methods has shown that positive associations between self-related constructs and *subjective* measures of sleep quality is largely due to stable trait variance. In these previous studies both self and sleep measures were administered via self-report. One possibility is that our inability to detect state-like variation in these associations may be due to the insensitivity of self-report sleep quality measures. To more thoroughly test the relationship between self-related constructs and sleep quality, the current study will ask how self-related constructs relate to sleep quality using objective measures of sleep quality. To assess objective measures of sleep quality participants will wear acti-watches which use actigraphy principles to provide sleep schedule variability, sleep quantity, and sleep quality statistics.  If participants consent to have their data from our previous study (68828.A2) connected to their data from this study, we will explore how individual differences in resting state EEG activity and neural signatures of self-related processing relate to state and trait variation in sleep quality above and beyond the self-related constructs. |

1. **Sample and setting**

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| **3.1 Who are the proposed participants and where are they from (e.g., fellow students, club members)? List inclusion / exclusion criteria if applicable.** |
| Participants will be university of Southampton students who previous participated in a study in our laboratory (68828.A2) and consented to be re-contacted about additional studies in our laboratory. |

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| **3.2. How will the participants be identified and approached? Provide an indication of your sample size. If participants are under the responsibility of others (e.g., parents/carers, teachers) state if you have permission or how you will obtain permission from the third party).** |
| Participants will be university of Southampton students who previous participated in a study in our laboratory (68828.A2) and consented to be re-contacted about additional studies in our laboratory. Participants will be re-contacted via email (see attachment) and invited to sign up in the current study via the eFolio system. We aim to collect data from approximately 60 participants which will give us adequate statistical power to detect modest associations between sleep and self-related variables. |

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| **3.3 Describe the relationship between researcher and sample. Describe any relationship e.g., teacher, friend, boss, clinician, etc.** |
| There will be no direct relationship between researcher and participant |

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| **3.4 How will you obtain the consent of participants? (***please upload a copy of the consent form if obtaining written consent***) NB. Consent form is not needed for studies collecting data online.** |
| Participants will sign a consent form in the laboratory when they come in to pick up the acti-watch and complete the day 1 questionnaires via Qualtrics. |

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| **3.5 Is there any reason to believe participants may not be able to give full informed consent? If yes, what steps do you propose to take to safeguard their interests?** |
| No |

1. **Research procedures, interventions, and measurements**

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| **4.1 Give a brief account of the procedure as experienced by the participant. Make it clear who does what, how many times and in what order. Make clear the role of all assistants and collaborators. Make clear the total demands made on participants, including time and travel.** *Upload copies of questionnaires and interview schedules to ERGO.* |
| 1. **Contact:** Participants who previously participated in another study in our laboratory (68828.A2) and agreed to be contacted about an additional study will be approached via email (see attachments for email script). Those who are interested can sign up for the study via the eFolio system. 2. **Lab Session:** Next participants will come into the laboratory for a 30-minute session where they will have the opportunity to read and ask question about the information sheet and sign the consent form. Next, participants will complete day 1 questionnaires and given an acti-watch to monitor sleep quality over the next two weeks. 3. **Longitudinal Phase:** Then for two weeks participants will wear an acti-watch and complete a daily 5-minute online questionnaire. Participants will be able to complete the surveys from any device with access to internet (computer / phone). They will be sent (via *email*) a link to each new online questionnaire every day for the 7 days. 4. **Acti-watch drop-off and debrief:** After the 7-day longitudinal phase, participants will drop off the acti-watch and be debriefed. |

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| **4.2 Will the procedure involve deception of any sort? If yes, what is your justification?** |
| No |

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| **4.3. Detail any possible (psychological or physical) discomfort, inconvenience, or distress that participants may experience, including after the study, and what precautions will be taken to minimise these risks.** |
| There is no known risk with participation. |

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| **4.4 Detail any possible (psychological or physical) discomfort, inconvenience, or distress that YOU as a researcher may experience, including after the study, and what precautions will be taken to minimise these risks. If the study involves lone working please state the risks and the procedures put in place to minimise these risks (**[**please refer to the lone working policy**](https://www.southampton.ac.uk/assets/sharepoint/intranet/hr/How%20to/Policy%20-%20Lone%20working.pdf)**).** |
| There is no known risk associated with this experiment. |

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| **4.5 Explain how you will care for any participants in ‘special groups’ e.g., those in a dependent relationship, are vulnerable or are lacking mental capacity), if applicable:** |
| Not applicable: there is no reason a vulnerable group should require special attention to complete the task compared to non-vulnerable groups. |

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| **4.6 Please give details of any payments or incentives being used to recruit participants, if applicable:** |
| Overall, the study should take approximately 1.5 hours as follows: (1) Lab Session (30 minutes); (2) Longitudinal Phase (35 minutes = 5 minutes × 7 days); and (3) actiwatch drop-off and debrief (25 minutes). Thus, participants can earn 18 credits for participants in the study. If participants complete all 7 daily surveys they will get a 5-credit bonus. Thus, participant can earn a up to 23 credits. |

**5. Access and storage of data**

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| **5.1 How will participant confidentiality be maintained? Confidentiality is defined as non-disclosure of research information except to another authorised person. Confidential information can be shared with those already party to it and may also be disclosed where the person providing the information provides explicit consent. Consider whether it is truly possible to maintain a participant’s involvement in the study confidential, e.g. can people observe the participant taking part in the study? How will data be anonymised to ensure participants’ confidentiality?** |
| Research data will be kept securely on a password protected computer and anonymised. |

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| **5.2 How will personal data and study results be stored securely during and after the study. Who will have access to these data?** |
| As this study uses *eFolio* to recruit participants, when participants sign up to take part in the study, they will automatically provide their university email address. This will provide a way for us to distribute the surveys as well.  Participants will be given a unique participant ID number in our previous study (68828.A2). This ID number will be known only to the participant and it will be the ID number participants use on each daily Qualtrics survey. This ID number will also allow us to connect data from our previous study (68828.A2) to the current study *for those participants who consent to have their data connected*.  When the participant attends the in-person lab session, they will sign the consent form. The consent form will be stored securely in locked filing cabinet located in the lab.  Actigraphy data will be recorded via acti-watch; participants do not need to interact with the watch, the data will be recorded automatically. During the 2-week data collection, actigraphy data will remain within the acti-watches internal storage. Following the return of the act-watch, the actigraphy data will be downloaded and stored on the researchers' personal computers, which are password protected.  Raw data from the self-report surveys will be collected and stored on Qualtrics, which is password protected. The downloaded anonymised data will be stored on the researcher’s personal computers and may be uploaded to the Open Science Framework website for open access. |

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| **5.3 How will it be made clear to participants that they may withdraw consent to participate? Please note that anonymous data (e.g., anonymous questionnaires) cannot be withdrawn after they have been submitted. If there is a point up to which data can be withdrawn/destroyed e.g., up to interview data being transcribed please state this here.** |
| It will be explicitly stated to participants in the information sheet that they may withdraw from continued participation at any time. It will be explicitly stated that any data collected thus far (I.e., acti-watch data, survey responses) may be used to fulfil the purposes of the present research. |

**6. Additional Ethical considerations**

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| **6.1 Are there any additional ethical considerations or other information you feel may be relevant to this study?** |
| **No.** |