

Post-Graduate Collaborations for Development of a Novel Psychobiological Protocol

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Long have gone the days of predominantly solo research. Co-authorship and collaborative studies are unsurprisingly on the rise within psychology, and these shifts in shared contribution are noted particularly in biological fields (Henriksen, 2016). It does not need be said that collaboration allows for larger samples, greater interdisciplinary input and more frequent citations; and so, combining collective efforts and expertise is somewhat considered a reflection of high-quality research.

But, try conveying this to three recent Psychology BSc graduates, all strangers; each harbouring deep-seated reservations when asked to collaborate on a year-long research project as part of their master's placement. Call it uncertainty bred from years of undergraduate group-work quarrels and subsequent refusal to rely on others to competently live up to our perfectionistic views of first-class completion. So, you can imagine our doubt only growing when informed of the intricacies of the task at hand; that was to develop and implement a novel psychobiological protocol to induce a physiological and psychological stress response. This task would serve as part of a larger investigation into the effects of a quick positive writing intervention to mitigate the impact of stress-reactivity, and the various factors potentially moderating this relationship. This would also be the first time any of us had pre-registered a study using the Open Science Framework. We were all feeling slightly daunted to say the least.

Initially reluctant to confide in one another's individual abilities, we each separately threw ourselves into developing such a procedure by adapting the dreaded trier social stress test paradigm (TSST; Kirschbaum, Pirke & Hellhammer, 1993) into a more feasible, six-month, three-student, minimum-36-participants, plus a 4000 word report, lab-based task. It was only once we were a few weeks into this 'collaboration' when we realised that at postgraduate level, the stakes were higher and more unobtainable should we continue to fight this battle alone. We also began to accept that as our negative collaborative undergraduate experiences receded in the rear-view mirror, we could indeed rely on each other to competently tackle the task at hand, given that we were all clearly willing to put in the work; three brains were better than one for a change. Furthermore, we got to learn each other's research preferences and expertise. Despite only being at master's level, we could already identify who was more proficient at what and which tasks to delegate to whom. Learning from each other was a key, and exciting new opportunity that none of us expected to experience.

Splitting task load was also a new concept. Again, keeping our distance from our undergraduate habits of hoarding responsibility, we each were able to delegate tasks such as ethics submission, pre-registration and our TSST-style task development.

Due to this efficient collaboration, data collection was to be straightforward. As is concurrent with the original TSST, the three of us consisted of a panel of judges who would monotonously judge

participant's performance on a counterbalanced 5-minute public speaking task and a 5-minute mental arithmetic task. Before said task, the participant would complete a brief writing task (positive vs. control), while having subjective and physiological stress (heart rate; systolic & diastolic blood-pressure) measured at consistent intervals throughout. Considering that we only had around two-months to collect upwards of 36 participants, we were grateful to have one another to participate in this, honestly quite tedious, 45-minute process. By the time we were at our fifth participant, we already had the procedure down to a rhythm, and we continued on with our concise practices until our twenty-eighth participant was complete.

Unfortunately, this is where our endeavours abruptly ended. With only a week of scheduled participants left to go, Covid-19 cut off our sample and our data collection ceased. We were able to complete our placement reports despite the lack of data, however, it was disappointing to abandon a study we had invested so much time and energy into with drastically reduced power and essentially just a skeleton of the investigation that we had aimed to complete.

Reflecting upon this experience, we each seem to value these collaborative practices equally, particularly within the psychobiological field. It is safe to say that some valuable lessons have been learned that will benefit us all in our future research ventures and careers. Firstly, you must not be afraid to rely on each other, despite that nagging feeling that insists on independence. The benefit of working as part of a team is that you can assist the process with the added benefit of learning from others with different expertise. As well as sharing the workload, we have personally found that collaboration allows for greater individual focus on the bigger picture, which is appreciating the research conducted. It's important that there is passion behind the project at hand, and then if things go awry, you have the motivation to persevere. Having an extra few hands-on-deck enables us to share this passion and enjoy this process together, especially as recent graduates who are just scratching the surface of what research entails and can be. For example, as many researchers out there know, you have to be ready to think on your feet and adapt to the research at hand. Working as part of a team provides a sense of support and security should any unpredictable obstacles pop up and is particularly useful for those not yet fully confident in their abilities to carry out gold-standard research. All in all, collaborative work may be overlooked by some, but for postgraduates like ourselves, it proves to be invaluable for developing newly acquired research skills and techniques, as well as improving individual confidence. Moving forward, it has been made clear when facing unpredictability in our research, nothing is more certain than solid teamwork.

Henriksen, D. (2016). The rise in co-authorship in the social sciences (1980–2013). *Scientometrics*, 107(2), 455-476.

Kirschbaum, C., Pirke, K. M., & Hellhammer, D. H. (1993). The 'Trier Social Stress Test'—a tool for investigating psychobiological stress responses in a laboratory setting. *Neuropsychobiology*, 28(1-2), 76-81.