Original Article

Open Science and my Research Journey

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I started my undergraduate degree in Psychology in 2016 at the University of Essex. Staying on for four more years to do a Master's and PhD was not in my original plans at all. But something – perhaps my innate curiosity, my insatiable thirst for learning, my love for all things challenging and unanswered, my need to do something more, something with meaning and significance – led me, perhaps rather inevitably, here.

This realisation was primarily shaped by all the different research placement I did during my undergraduate years, ranging from developmental placements, to projects on social psychology and judgement and decision-making. One of these also paved the way for my undergraduate dissertation project on the effect of perceptual disfluency on cognitive reflection, which I manged to publish with my supervisor, Professor Miroslav Sirota (Sirota et al., 2021), and for which I also won the prize for the best undergraduate dissertation.

It was during my undergraduate years that I also started to learn about open science. Given the recent publication crisis in Psychology, there was a shift towards learning and adopting more open and transparent research practices, and this was how the Open Science Working Group in my department was formed, where I have been a member for the past six years. This enabled me to significantly expand my knowledge and develop my skills by attending various workshops and seminars on open science, including on pre-registration, reproducible code, transparent visualization, preparing a Registered Report, using OSF and GitHub, as well as attending various discussion meetings focusing on ways forward for teaching and implementing open science practices in the department and the wider university. At that time, I also became a member of the global Psychological Science Accelerator network aiming to accelerate the accumulation of rigorous knowledge in psychological science while conducting open and transparent research.

During my studies, I also learned a lot about open science from my academic mentor, Professor Miroslav Sirota, who was one of the main proponents of open science in my university, regularly applying open science practices in his own research, and who was also the open science facilitator in my department; he always stressed to me the importance of using open science practices and he encouraged me from the start to learn more and apply them in my own research – and I think this also proves how important and instrumental it can be to have academic mentors and colleagues who are familiar with open science practices and are willing to help others.

Going into the final year of my undergraduate degree, I already knew at that point that I wanted to do postgraduate studies. I applied for funding with my supervisor, and I was awarded a 4-year ESRC (SeNSS) fully-funded studentship for Master's and PhD, which, of course, shaped everything.

I graduated in 2019 with my BSc degree having achieved the highest year mark and highest overall degree mark and was awarded the British Psychological Society Undergraduate Prize, while I

finished my Master's in Research Methods in Psychology in 2020, having been awarded the prize for the best MSc dissertation on the effect of cognitive processing on antibiotic expectations. My PhD research was on medical decision-making, and specifically, on testing a computational psychological theory to better understand the drivers behind people's inappropriate antibiotic expectations. I had always been interested in anything medical and health-related, so deciding on a topic that managed to combine behavioural science with health research, as well as having considerable potential for impact, was very important to me.

During my MSc and PhD degrees, open science continued to be an indispensable part of my research journey; I pre-registered my Master's Dissertation study, as well as all the studies of my PhD using the AsPredicted pre-registration protocol and site; I conducted power analysis for all my studies using either GPower or running power simulations in R; I used the open-source software R for all my research analyses; I prepared and shared all my data, materials, and code on OSF; and I also prepared and submitted a Stage 1 Registered Report, which is currently under review.

During that time, I also had the chance to get involved in several other projects, including the Psychological Science Accelerator's Rapid-Response COVID-19 Project (PSACR) on the psychological and behavioural aspects of the COVID-19 crisis (Dorison et al., 2022; Legate et al., 2022; Wang et al., 2021), and the Many Labs Replication Project on the effect of competition on moral behaviour (Huber et al., 2023), all of which were multi-site, multinational, and open studies, which further enhanced my open science skills

During my PhD years, I also did everything I could to improve my own skills and grow as a researcher, including completing various research and statistical courses, getting involved in different projects, and attending academic conferences and workshops to present my work. During the EHPS 2022 annual conference that I attended with my supervisor, we also formed the ABC Antimicrobials: Behaviour & Cognition Network with other researchers with a joint vision to tackle antimicrobial resistance through behavioural science and open research. Since then, we have organised two annual workshops, and we recently published a commentary on Nature Human Behaviour for the growing threat of antibiotic resistance (Sirota et al., 2023).

My research and open science skills were further developed through a part-time research assistant job during my PhD on open science on the Horizon 2020 grant "YUFERING: YUFE Transforming Research and Innovation through Europe-wide Knowledge Transfer." This allowed me to gain a much more thorough understanding of open science, as well as learn new research skills, such as conducting behavioural analysis on open science practices using the COM-B model, designing the open science survey to identify the barriers and challenges for implementing open science practices at the researcher and institutional level, and reviewing the open science policies and mandates of all the YUFERING partner institutions.

In the final year of my PhD, I also did a three-month UKRI research government internship with the UK Health Security Agency as I wanted to explore how research is conducted in different settings. The internship helped me grow both as a person and as a researcher, and I had the chance to be involved in some very exciting projects, ranging from working on the Pandemic Diseases Capability Board project in partnership with the Department of Health and Social Care, to a qualitative College of Policing project on the impact of repeat assault on police officers, and to a TARGET antibiotics workshop project. This enabled me to learn new skills, such as qualitative data analysis using the NVivo software, and I also co-authored the qualitative research paper for publication (Davidson et al., 2023). I was also able to share with my internship team and wider department

various open science online resources as they all wanted to learn more and start implementing open science practices in their own research. More importantly, the internship clarified for me that I'm much more suited to an academic career, which was both liberating and instrumental in a way – and I would encourage any early career researcher who is unsure about which route to follow to try out some different opportunities if given the chance to do so before committing.

I completed my PhD this year and I have since started working as a post-doctoral research fellow at the Essex ESNEFT Psychological Research Unit for Behaviour, Health and Wellbeing (EEPRU) at the University of Essex with Professor Sheina Orbell. Given my research interests, I'm very excited to have the chance to work for the next three years on health-related research, learn new skills, and further develop my research agenda, while continuing to engage in open science practices. I'm especially looking forward to conducting research in the areas of health communication and misinformation, antibiotic resistance, and habits. At the same time, I'm now in the process of trying to publish my PhD research findings.

As demonstrated, open science has been – and continues to be – an integral part of my research career. This award was very important to me as it also served as a recognition of all the effort that I have been putting over the years to become a better researcher – and I think that it was both the breadth and depth of my open science experience that ultimately enabled me to win this prize. Openness, I think, is the only way for science to go forward and for us researchers to get better by shifting the focus on scientific quality, transparency, and integrity – and so I would encourage anyone, especially early career researchers, to start learning and implementing open science practices in their own research.

I want to say a big thank you here to my incredible PhD supervisors, Professor Miroslav Sirota, Dr Jonathan Rolison, and Dr Matteo Lisi. I've been lucky and privileged enough to have only worked with supportive people - and I think that has really made all the difference. I'm very excited to continue my research journey and see where it will take me next.

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