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White coat syndrome: Learning from mistakes in laboratory research

Much stress and anxiety research is underpinned by laboratory protocols that involve the strict control of extraneous variables, effective manipulations, and carefully developed experimental procedures. For interesting examples, see Ax's (1953) classic research in which fear was induced by connecting participants to a "dangerous" (p. 435) polygraph which would send sparks across the room during the course of the experiment (get that through ethical approval!) Or Lazarus and Erikson's (1952) stress research, where the experimenter was required to criticise participants' task performance "in the most severe manner" (p. 101) to create a threatening subsequent performance situation. The perceived genuineness of these manipulations rests on the experimenter's ability to adopt a certain role and modify their behaviour convincingly and consistently.

With a raft of stress research to inspire me, I attempted to develop laboratory protocols with effective experimental manipulations for my PhD research. This short account reflects on critical incidents (Hannigan, 2001) that have occurred when collecting laboratory data. Through the critical incidents I have identified both helpful and unhelpful behaviours responsible for the effectiveness of my data collection endeavours. It is hoped that by reading this piece, the reader might avoid some of the mistakes I made. To be clear, my reflections are far from a *how to guide* for collecting data, but detail circumstances not often written about that are nonetheless pertinent areas for consideration.

Showing my cards too soon

After developing a protocol to examine how different instructions (positive and negative) could influence psychophysiological stress responses to motor performance (throwing bean bags at a target), I embarked upon data collection with a student population. I sent a lot of emails, stuck numerous posters up, and appeared in my colleagues' lectures to recruit participants. When recruiting, I ensured the secrecy of my manipulation by using very general words to describe the study, such as "you will hear some audio instructions while at rest, as we collect psychophysiological data", avoiding any mention of there being two different instructions or the psychophysiological aspects I was interested in (see Jones, Meijen, McCarthy, & Sheffield, 2009) . When participants arrived at the laboratory, a curtain concealed the bean bags and target used for the task. On one occasion, a participant asked the confederate, whose job it was to attach an array of cardiovascular recording equipment to participants (see Figure 1), what the study was about. The assistant proceeded to explain, in impressive detail, the aims of the research, the manipulation (different instructional sets), and expected outcomes. This rendered the manipulation ineffective and confounded all

psychophysiological data. The data could not be used. I realised that I had spent so much time making sure that the recruitment information and laboratory environment concealed the nature of the research, I had not given my confederate any specific instructions about the importance of concealing the manipulation at all times. I also realised that just because I value the importance of strict laboratory protocol, not to assume that everyone else does. This is *my* research, after all.

Figure 1. Experimenter attaching cardiovascular recording equipment

Deceiving the deceiver.

In another study, participants watched a video showing a climbing wall that they would be asked to ascend while being filmed (see Figure 2). The study hinged on the unknown nature of the video's contents. After a successful data collection session with one participant (A), I awaited my next one (B). While I waited, I overheard A explaining to B the exact nature of the task even though participants are given specific instructions not to reveal anything to others. Though frustrated, I decided against a confrontation, and instead asked B on entry to the lab if he knew what the experiment was about. He said no. At this point I made a decision based on ethics. I took his word (even though I knew it to be false), collected data, and discarded it as the manipulation was compromised. Through this incident, I realised it is my responsibility to explain to participants why it is important not to reveal study details to others. My delivery of this information was via a debrief sheet, which let's face it, participants glance at briefly. I have subsequently developed two strategies to avoid such pitfalls. One is to encourage participants to buy-in to the methodology (e.g., if you keep it to yourself we can see how your friends respond to the video), and another is to verbally emphasise how important it is that they do not reveal the study details to others by asking for

a "very important favour". In addition, I now ask participants on entry to the laboratory, in a very informal manner, what they know about the research study.

Figure 2. Exert from the climbing task video

A series of unfortunate events

There are times when seemingly unpredictable occurrences engender panic, mainly because every data point is important and anything that might influence the quality of that data is threatening. Some occurrences are controllable, some are not. For example, on one occasion after I had played a participant ego-threatening audio instructions regarding an upcoming penalty shoot-out competition, Ronan Keating's "When you say nothing at all" starting to blare inexplicably from the speakers. This was not part of the protocol. On two occasions, the university fire alarm sounded during data collection, requiring me to escort a participant, wearing various pieces of cardiovascular recording equipment, as quickly as possible to the nearest exit (both were set off by overdone Panini's from the university café). In both situations the data had been rendered useless and I accepted that those events were uncontrollable. However, some events I could have controlled. For example, with better participant screening techniques, I could have avoided being in a situation where an athlete fell asleep continuously during data collection, only waking up when blood pressure was being taken (automatically, once a minute). After encouraging him to stay awake once or twice, I realised the manipulation was useless, as he slept through the ego-threatening instructions. Afterwards I found out that the participant was narcoleptic, a condition which I did not screen for. Following this experience, I now enquire about neurological conditions in addition to my usual cardiovascular health questionnaire. It is better to glean all information that could potentially hinder data collection as early as possible so as not to waste time and resources.

Concluding remarks

This reflection illustrates my naivety in undertaking laboratory research. It also shows that despite all efforts to create a "perfect" laboratory protocol, pitfalls occur in aspects that are often uncontrollable. However, the controllable pitfalls usually only happen once. In other words, it is quite easy to learn from mistakes when conducting laboratory research because most hiccups can be resolved with simple experimental constraints. For example, to fully brief confederates on protocols, to say something different to participants when they enter the laboratory, to add a question to the consent form; are all simple resolutions, but make the difference between losing and retaining precious data.

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