**Structured protocol for writing an applied autoethnography case study**

***Project title***

*Questions:* What was the project? What species did it include? What kind of broad study site was involved (i.e. parkland/public beach/mangrove/urban area/coastal wetland/mixed woodland)? Who did it involve?

*Explanation:* Providing a quick one-to-two-line title of the project in question allows the reader to immediately identify whether the case study may be applicable to their own projects or research. One of the main goals of employing this applied autoethnographical tool is that it will inform future parties designing/performing similar studies on the obstacles encountered by the researcher in their project, ergo enabling them to prepare or adapt to similar issues accordingly, ultimately saving time, effort and resources. For this to be effective, the reader must be able to identify the key components of the project to decide if it is relevant to their study.

***Researcher profile***

*Questions:* What is the age/gender/nationality/cultural or ethnic background of the researcher? What is the working position of the researcher? Did the researcher have previous experience in this study area? Had they worked in this field for long? What other aspects of the researcher’s background may have played a role in the outcome of the project? Were they working in a familiar or unfamiliar environment? Were there any previous working relationships within the project?

*Explanation:* When writing a manuscript for a journal, the profile of the researcher could have played in project success is often disregarded. However, we know that in a world where certain prejudices and closed communities exist, research can often encounter unforeseen problems associated with the human dimensions of science which are rarely recorded and disseminated to the wider community. Here, the researcher has the opportunity to outline any part of their background that they believe is relevant to share as part of the case study and which may have influenced the project outcome. It also allows readers to determine whether they have a similar background to the researcher and whether this may result in them encountering similar obstacles. This enables the readers to either prepare to deal with identified issues/conflict or find ways to avoid these problems early in the process based on the experience of similar researchers.

For example, a foreign national may find themselves dealing with suspicion or being entirely disregarded by the public, especially if their project focus deals with a local issue that may result in them being labeled as an ‘outsider’ or ‘foreign eco-warrior’. Understanding that this is a possibility can allow readers to include local representatives in a project, such as local rangers or community groups, to allow for better engagement with the public. Another example, an individual who has only just entered a study site for the first time may be more likely to encounter issues with administrative delays, identifying which governing party or official to approach, and may meet more suspicion from the public than an individual who has worked on that study site for a decade, is well-known, and already knows what systems are in place. In this case, the newer individual could benefit from the knowledge that they may need to identify and include a long-established organization member in the early stages of the project.

***Context***

*Questions:* What is the background of the study? What were the project aims? What was the spatial and temporal scale of the project, i.e. where did it occur and over what time period? What were the previous perspectives, e.g. previous studies, management conflict, current projects in place?

*Explanation:* Having provided a project title earlier to allow the reader to immediately identify whether the case study is relevant, this section allows the researcher to provide more detail on the background of the project similar to the introduction in a research manuscript. By contextualizing the project in terms of its goals, background, and where/when it occurred, the reader can immediately compare similarities and differences to their own project, ergo highlighting which issues may be relevant. For example, two citizen science projects focusing on the same species over a similar timeframe may encounter similar issues with public engagement, even if they occur in different areas. As another example, if one project encountered unforeseen issues with transporting supplies into a particular site, then another project transporting different supplies to the same site for another project years later could majorly benefit from that knowledge and a clear report of how that problem was initially solved.

**Problems encountered**

*Questions:* What problems did the project encounter? Who was involved (i.e. landowners/the public/researchers/stakeholders/etc.)? What biases were present that either caused or were part of these problems? Why did this occur? Is there any background to these problems in the literature/was any previously identified?

*Explanation:* Here, the researcher can specify in detail what the key problem(s) encountered was, as well as what biases (either their own or from another party) existed that may have contributed or resulted in the manifestation of this issue. This section addresses the issue which the researcher wishes to report to individuals performing a similar study in the future. The researcher should include the reasons why they believe this problem occurred as transparently as is possible, without hiding human error or biases involved.

**Costs and impacts**

*Questions:* How was the study impacted? What were the effects on the results (or the projected effects on the results if the issue hadn’t been identified and addressed)? What were the overall consequences of this issue (for the project/for the individuals involved/for the outcomes of the project)? How would the study have been different if this issue had been resolved in a different manner?

*Explanation:* Having clearly identified the problem and its causes, here the researcher can explain the impacts that the problem had on the project. These are the outcomes that the researcher wishes for readers to avoid in their future projects. Possible impacts are diverse and are unique to every problem encountered across the vast array of transdisciplinary studies in natural sciences. For example, they may include wasting time, wasting money and resources, increased stress for the researcher and the other individuals involved on the projects, undesirable impacts on the study species or site, generation of negative relationships with other stakeholders, holes in communication between involved parties, inaccurate study results, or legal issues, amongst others.

In the case where a solution was found and is being recommended, here the researcher can communicate what the projected outcomes would have been should this problem not have been addressed. These impacts may include any of the above, and while final impacts may include an aspect of speculation, the researcher is also encouraged to communicate the impacts up until the point where the solution was implemented and what these meant for the project overall.

**Lessons for practitioners**

Here the lessons from the study can be disseminated to the community to avoid repeated problems. This section is divided into two sections depending on the outcome of the problem, if the researcher discovered a solution they can use the “*process/method”* guide below to describe how they overcame the problem. In the subsequent section we explain how the researcher learned from the experience and offer guidance to future researchers who may encounter similar problems.

***Optional paragraph if solution was found***

*Process/Method*

*Questions: How did the researcher address this problem? What solutions were attempted? Which were successful and which were not? If there is an advisable solution, exactly what steps were taken? Is this method project-specific or could it be adapted? Would you use this method again? If you were in optimum conditions, how would you tackle the problem differently?*

*Explanation: This allows the researcher to outline a solution to a problem they encountered which they believe is an important, and typically unreported, finding or aspect of their study itself. In manuscripts, final methodologies are often the only aspect which are reported, but this subsection allows researchers to address issues which arose during the methods, different solutions that were attempted, and the final decision that was made. This also adds a further degree of repeatability to studies in the natural sciences, as it ensures that individuals who may wish to repeat a study know how to address the same issue, should they encounter it. If no solution was reached on time, and the researcher is reporting an issue in the hopes that readers will be able to address it in a timely manner in their own studies in the future, then this subsection may be excluded.*

***Mandatory for all case studies:***

*Questions:* What could readers do to avoid similar issues in the future? Were there biases present that could be mitigated? If a solution was attempted, would the researcher recommend it? What considerations do readers need to take into account when designing similar studies in the future? How can readers identify the warning signs that a similar issue is about to occur or already beginning, and how can they remedy this quickly? What advice can you offer researchers who are about to begin a similar project?

*Explanation:* This is the education section of the report – here the researcher addresses everything that they wish they had known going into their project in order to avoid the problems that arose. Here readers should be able to take away key messages and methodological solutions discovered over the course of their study. Answers can be framed, or thought of, as advice for readers. If a solution was found, then readers may be advised to implement it, however if no solution was found, then potential solutions for people to attempt in the future may be advised. This is the key section that readers are looking for, and must provide clear lessons learned over the course of the study.