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Doing Replication Research in Applied Linguistics, Graeme Porte and Kevin McManus. Routledge, New York (2019). viii + 182 pp., ISBN: 9781138657359 (pbk).

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Potential error in human knowledge is the main driving force behind replication research, a relevant corollary of critical approach to scientific knowledge. Accordingly, we come back to a study to verify it and reduce possible chance factors. Replication research starts right after the publication of one particular previous research study that attracted you, rather than a set of studies. Replicating a study sets us on a journey back to the history of our interest area, due probably to a failure in the previous study.

Consisting of nine chapters, Doing Replication Research in Applied Linguistics is just intended for this journey. Drawing our attention to the extent of the confidence we have in the scientific research, Porte and McManus in Chapter 1 highlight the status of replication that contributes to conducting good research and increasing knowledge. The first chapter then situates the replication research within the field of applied linguistics. The authors then present a synoptic view of the content of the chapters.

As applied linguists should conduct experimental research scientifically, they should therefore verify results "to construct knowledge rather than merely amass it" (p. 13). Chapter 2 thus urges us to ask the right question and gives four routes to finding the target study: rereading any experimental study, searching in an academic search engine, reading state-of-the-art reviews critically, and reading critical/position replica papers and calls for such studies. Researchers interested in replication should also consider other issues, such as relevance, publication date, unusual outcome, familiar procedure, and publication venue for replication.

Chapter 3 recommends us to find an experimental study and brainstorm the features of its basic aspects, posing questions to establish routes for replication, and to raise awareness or criticality perspective. With exemplar papers, the authors critically and explicitly work on features that constitute the research situation and, thus, make it suitable for replication. The features are addressed by some targeted questions related to numerous aspects of the target exemplar studies, such as participant characteristics, sample size, treatment length, setting, control agent,

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instruments, measurement, statistical significance and effect size, and generalizability that should have been described in detail.

To conduct replication, we can look out from the inside (internal perspective) or look in from the outside (external perspective). The former is done on the original data before publication by the author himself. This is considered a quality control and reliability check, leading to the chances of reexamination of the study by the readers. Later reexamination by others normally focuses on some aspects, like appropriate use of statistical analysis, selection procedure, and so on. Chapter 4 suggests the replicator to assume that the original author has not scrutinized his own study. Therefore, he should do some routine checking, i.e., initial critique, "to see whether results can be reproduced using what is available for examination in the article." (p. 50). To exemplify, the chapter sensitizes readers towards testing assumptions of most commonly used statistical procedures, such as Chi square, *t*-test, and their respective effect sizes. Finally, it urges researchers to use three current approaches to internal replication: a) comparing the outcomes of different subsets of the resampled data (cross-validation), b) going beyond cross-validation by omitting samples one by one and repeating the test (jackknife), c) copying the data sample many times to form a data mega-file (bootstrapping).

An extension/follow-up study differs from a replication in the focus and a comparison of what the replication says about the original study. To sort out the confusion, Chapter 5 presents close, approximate, and conceptual replication as a process since exact replication is not possible, due to change in variables. Close replication follows pre-planned series of attempts wherein researchers modify only one variable (e.g., participants, time, or task) at a time to detect its influence on the dependent variable. It allows comparing our outcomes with those of the original study. Approximate replication follows from close replication as a next step wherein we compare our outcomes with those of the target study, focusing on the impact of two variables on the outcomes. Conceptual replication focuses on the outcomes of the target study, without comparison with our replication findings. It aims to "widen the application, relevance, or generalizability of the underlying theory or hypotheses of the original study" through a different operationalization, methodology, analysis, and so on (p. 84).

Chapter 6 and 7 focus on executing and writing up a replication study. In this process, the replicator should specify what, why, and how changes were made in the original study. In these two chapters, Porte and McManus execute and write up a close replication of Bitchener and Knoch (2010) and take as models two published replication studies (Eckerth, 2009; McManus, & Marsden, 2018). To this end, Chapter 6 centers on research questions and methodology, attempting "to follow as closely as possible the original design" of Bitchener and Knoch (2010) "except for a difference in L2 proficiency" (p. 98). To do that, it raises important questions on the feasibility of methodology (participants, target structures, treatments, and instruments), hence critiquing and understanding the methodology. Likewise, Chapter 7 extends the replication process to the analysis, results, discussion, and conclusion of the above study, highlighting systematically the similarities and differences that exist between the two studies (i.e., original and replication), along with the justifications for any differences resulting from a variable modification. Similar to Chapter 6, it also illustrates how the write-up of a replication should cover these components, respectively, to show a better picture across the two studies. In every section, the authors emphasize that the write-up should clearly state the change and the similarity between the original and replication studies.

Chapter 8 focuses on how to disseminate a replication research, normally in journals, conference presentations, and poster presentations, intended to gain a wider readership. The authors in Chapter 8 offer general and specific considerations in selecting a suitable journal to submit the replication. The considerations and guidelines concern the scope as well as whether the journal publishes replication research. More specifically, the authors draw attention to journal visibility,

foci, editorial board, authors, reviewers, and current trends in research interests. They also discuss issues on how to justify the replication submission. Furthermore, they illustrate how replication authors can clearly present a summarization of the replication in conferences and a visualization in poster sessions, providing clear models with the above articles on the wording and comparison of the original and replication studies. Detailed instructions on how to format the comparative nature of the outcomes are separately provided for each outlet. Yet, the authors emphasize that replications are delicate. Thus, throughout the text, they give careful and thoughtful recommendations to the prospective authors on how to avoid any potential conflict or controversy.

Finally, Chapter 9 is an epilogue, restating the reasons for replication in applied linguistics to get rid of skepticism as the research findings should contain reliability and allow for close scrutiny to help construct knowledge rather than accumulate it haphazardly.

Doing Replication Research in Applied Linguistics gives interested readers a change in perspective in looking at and conducting any research, and resultantly in replicating the studies conducted by other authors as well as being prepared for one's own research to be replicated. This change in perspective might well be strengthened by the growth of the field that has brought about a series of rigorous as well as scientific methodological procedures for researchers to obtain further knowledge and information (Akbarian, 2019). Consequently, all of this leads to a fine-tuning of our findings.

In addition to the clear style of writing and principled organization of the content, this volume enjoys some specific features. For instance, boxed activities are a useful tool to make the discussion for different sections highly practical, tangible, enlightening, and thought-provoking as the readers follow the discussion and get aware of the systematic methodological practice. However, another round of editing would eliminate minor spelling mistakes, such as replacing 'content' with 'context' on page 43.

In sum, the current volume is a valuable addition to the existing repertoire of the books on research methodology and provides readers with a sharpened insight on conducting any research first and additional cognizance on how to replicate an established study with the aim of contributing to the knowledge of the community. Thus, reading this book, post-graduate students and researchers in general will develop care and rigor on doing any research and reporting the findings for the purpose of disseminating or replicating the research.

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