Language Development Research Editorial: Why do we need another journal?

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Abstract: *Language Development Research* is a platinum Open Access journal that commits to publishing "any empirical or theoretical paper that is relevant to the field of language development and that meets our criteria for rigour, without regard to the perceived novelty or importance of the findings". This commitment is designed to reduce publication bias and incentives to engage in questionable research practices.

Keywords: Language Development Research; publication bias; questionable research practices; HARKing; *p*-hacking.

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Why does the field of language development need a new journal? On the face of it, we are already well served. In addition to the non-specialist journals, we have several general child-language journals (i.e., journals concerned primarily with language acquisition and development in the pre-school and early-school years), plus specialist journals focussing on language disorders, second language learning, and bilingualism, as well as various linguistics journals.

The problem is that the vast majority of these journals, including – in my estimation – all existing language-development journals, are *selective* journals. That is, they endeavour to publish the best of the submissions that they receive. Exactly what constitutes the "best" is rarely made explicit, but selectivity is implicit in the superlatives in journal "About" statements, and in the hierarchy of journals in the heads of seasoned researchers.

Publishing only those papers that make a sufficiently novel or important contribution sounds laudable, until we consider the flip side: a reluctance to publish papers that don't reach a journal's (implicit) criteria for novelty, importance or broad interest; for example, because they replicate or extend a previous study, or because they report null findings, or findings that are simply unclear or messy.

Selectivity – selection on the basis of factors other than scientific rigour – distorts the scientific literature by introducing three major biases into the publication process (de Vries, Roest, de Jonge, Cuijpers, Munafò & Bastiaansen, 2018): (a) *publication bias*, whereby studies with null results are rejected or never submitted in the first place, (b) *outcome-reporting bias*, whereby researchers drop groups, conditions or sub-studies that fail to show a clear and/or desired effect and (c) *spin*, drawing conclusions that are not merited by the findings. Finally, if null findings do make it into the literature, they are less likely to be cited. Using the example of antidepressant drugs, de Vries et al (2018) show how these biases translate an evidence base that is, in reality, almost exactly 50/50 (the FDA classified 53/105 trials as positive) into a literature that offers overwhelmingly positive support for these drugs' efficacy (see Figure 1, reproduced from Figure 1 in de Vries et al, 2018).

Perhaps most seriously of all, selectivity all but compels fundamentally-honest researchers to engage in questionable research practices (John, Loewenstein & Prelec, 2012) such as *p-hacking* (Simons, Nelson & Simonsohn, 2011) – rerunning analyses with different coding, exclusions, covariates, transformations, statistical tests, sample sizes, and so on – and *hypothesising after results are known* (HARKing; Kerr, 1998), "reframing" the paper around a serendipitous finding that was not originally the question of primary interest (or even, in some cases, "fishing" or "data mining": collecting data in a purely exploratory fashion and only afterwards formulating theoretical claims or hypotheses). Sometimes these practices are intentional. Sometimes, and with the best of intentions, journal reviewers and editors

even request them explicitly. Sometimes they are entirely unintentional. After all, decisions have to be made regarding coding, exclusions, transformations and so on, and if one set of decisions allows us to see the otherwise-obscured effect that we confidently expected to be there all along, we are likely to genuinely believe that this is the correct one.

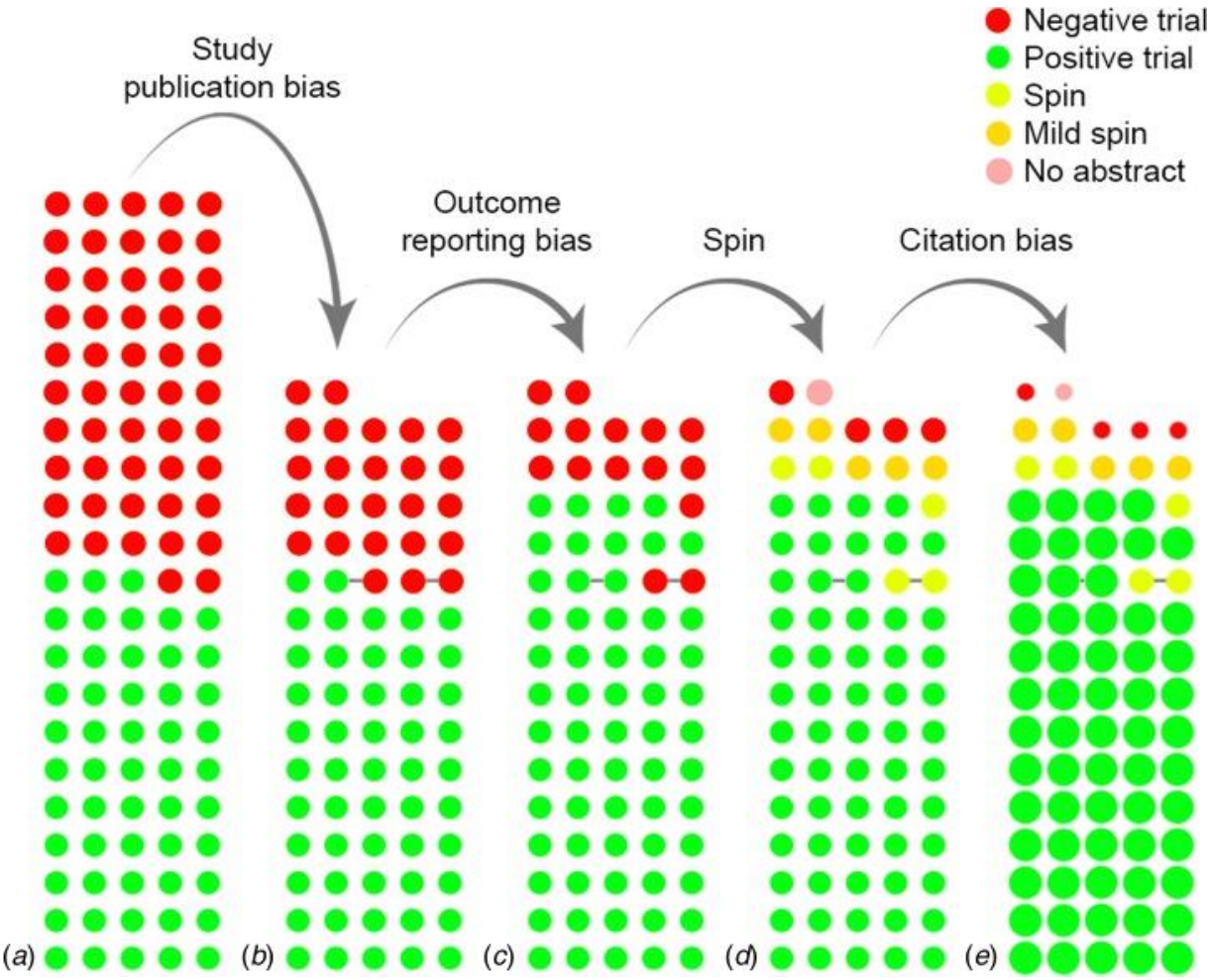

Figure 1. How *publication bias*, *outcome-reporting bias*, *spin* and *citation bias* skew the evidence base (from de Vries et al, 2018, creative commons licence).

The good news is that, at least in some fields, we seem to be moving in the right direction. Eason, Hamlin and Sommerville's (2017) survey of infancy researchers found that relatively few reported adding participants until p is <0.05 (2%), adding participants until they are confident that there is or is not an effect (11%), excluding dependent measures that yielded nonsignificant results (5%) or results that were

inconsistent with the initial hypothesis (1%), exploring different transformations of their data and using the most favourable one (1%), or planning statistical analyses only once the data are in hand (5%). These are encouraging findings. How, then, can we ensure that all subfields of language development research make similar progress, and that the many "null" findings that are likely to appear as a result of these more stringent research practices are published? The answer, in my view, is to stop basing publication decisions on studies' findings, thereby removing a major incentive to selectively report, HARK or *p*-hack. But how?

One way to do so is via registered reports, whereby studies are reviewed, and accepted in principle, based on their methods and analysis plans, before any data are collected (Chambers, 2013). To their credit, several journals in our field now offer this format. This is an entirely positive development, and we offer the registered-report option too. Indeed, although the format is relatively young, there is already some evidence to suggest that registered reports reduce publication bias quite dramatically. Allen and Mehler (2019) report that around 60% of registered reports in the domains of biomedical and psychological science produce "null" findings, as opposed to around 12% for traditional articles. Focussing on psychology, Scheel, Schijen and Lakens (submitted) find null rates of 56% and just 4% for registered reports and traditional articles respectively. These findings are dramatic, but the very low rates of null findings in traditional articles suggest that registered reports cannot solve the problem of publication bias alone, if journals continue to apply criteria of novelty or importance to articles outside the registered report stream.

A second way to avoid basing publishing decision on studies' findings is by committing to "publish any empirical or theoretical paper that is relevant to the field…and that meets our criteria for rigour, without regard to the perceived novelty or importance of the findings", as set out in *Language Development Research*'s policies and procedures. There already exist several general journals with similar policies – *Royal Society Open Science, Frontiers* and, to some extent, *PLOS ONE* (2020; though "Submissions that replicate or are derivative of existing work will likely be rejected if authors do not provide adequate justification") – but these are general journals that are not necessarily familiar to many language-development researchers. More problematically, all have article processing charges upwards of $1,000, for most article types.

Yet even this commitment may not go far enough. Chris Chambers, a former editor of *PLOS ONE,* notes that, in his experience, "When expert reviewers see null results, they are more likely to go on the hunt for imperfections in the methodology or rationale. This bias is especially insidious because although it is thoroughly results-driven, it requires no explicit reference to the results at all" (Chambers, 2020). The third and final way, then, in which *Language Development Research* strives to avoid basing publishing decision on studies' findings is by offering a results-redacted

format. This format allows authors to submit for peer-review articles with no Results or Discussion sections, even if – unlike for registered reports – the data have been analysed and these sections written. Our intention is that this format will allow peer-reviewers and action editors to evaluate papers solely on the basis of their theoretical and empirical rigour, without being unconsciously swayed by the results.

We will not, however, be requiring *all* empirical articles to use either the registered-report or results-redacted format. As Whitaker and Guest (2020) point out, invoking the "buffet model" of Bergmann (2019; as cited in Whitaker & Guest, 2020: 35), "Binging from the many different topics that fall under open scholarship will leave you feeling overwhelmed and exhausted". We take the view, then, that it is better to accept conventional, results-included articles than to force would-be *LDR* authors to "bite off more than they can chew" and risk driving them back to traditional "closed" journals.

Similarly, while we generally require all experimental materials, data and analysis code to be made available in a public repository prior to publication, exemptions will be granted when this is required to ensure participant confidentiality (particularly with hard-to-reach samples or clinical groups), to comply with local laws and regulations, or for copyright reasons (e.g., when researchers use a copyrighted standardized test). While open-science hardliners might take the view that researchers should not rely on data that cannot be legally or feasibly anonymized (e.g., certain video recordings) or use copyrighted tests, we take the "buffet" view: Some open science is better than no open science, and little would be gained by driving such papers to traditional "closed" journals. It is important to note at this point that the policies and procedures summarized here (and approved by our Editorial Board) will be kept under review, and evolve in line with discussions of open science practices both in our field and more generally.

In the meantime, our commitment to publishing any relevant paper that meets our criteria for rigour, though motivated primarily by openness and transparency, brings with it some additional – perhaps unexpected – benefits. First, because we do not screen papers for potential impact, or for their appeal to a wide readership, "relevance to the field of language development (typical and atypical, mono-, bi- and multi-lingual) is broadly construed so as to include, for example, studies of second language learning (or artificial language learning) in older children or adults, studies of nonhuman animals, computational modelling studies, studies or theories of the adult endpoint etc., provided that they are relevant to the issue of language development". Second, for the same reason, we need not impose any restrictions on the types of article that we publish. In addition to registered reports, results-redacted papers and "regular" empirical papers, we will consider literature reviews, systematic-reviews, meta-analyses, papers that present new research or analysis tools, theoretical articles, responses to previous articles, book reviews, and even new

types of papers that have yet to be devised. Third, unlike journals that are restricted to a fixed number of issues and pages per year, *Language Development Research* has no need to impose any limits with regard to the number of words, pages or references in a given article.

Fourth, we very much hope that, by not imposing criteria of impact or broad interest, *LDR* will be accessible to, and inclusive of, researchers who study and/or belong to under-represented populations. On the subject of representativeness, I note that while our current team of Action Editors is relatively representative of the field in terms of gender (with 5/7 female researchers), and is not entirely Anglophone (3/7 have a first language that is not English), they are drawn entirely from WEIRD societies (Western, educated, industrialized, rich and democratic; Henrich, Heine & Norenzayan, 2010), specifically the USA, UK and France. As a member of just about every privileged category that exists, all I can say is that I am aware of the issue of representativeness, and will do my best to address it. With regard to inclusivity and accessibility, we have taken some very small steps, by requiring alternative text for figures and allowing abstracts in multiple languages, but we must do more. In the meantime, key to inclusivity and accessibility is our commitment that the journal will always be free of charge to both readers and authors (i.e., "diamond" or "platinum" open access).

How can we survive with no income? Simple: We have no expenditure. The journal runs on the open-source Janeway platform and is hosted for free by Carnegie Mellon University's Library Publishing Service. For this, we must thank my co-founder Brian MacWhinney, who – via the Child Language Dates Exchange System (https://childes.talkbank.org/) – pioneered Open Science before the term was coined, and who kindly agreed to make *LDR* the official journal of the Talkbank system, which includes the *info-CHILDES* mailing list: the de-facto mailing list for our field. Of course, Carnegie Mellon are bearing some costs; not least the time of Rikk Mulligan, lead of the Library Publishing Service, who put in many hours setting up the journal. But the total cost to Carnegie Mellon can be no greater than a handful of APCs, let alone journal subscriptions.

In my view, then, the model we are adopting for *LDR*, whereby journal hosting costs are borne by universities in lieu of savings elsewhere, is one that can and should be replicated in other fields. After all, via our salaries, our institutions are already funding the writing, reviewing and editing of journal articles; there is no reason for them to baulk at the final financial hurdle of hosting them. We can *do* this. For the good of our field, for the good of science, we *have* to do this.

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