

WHY DO YOU NOT CITE THEM? – OMITTING RELEVANT PRIMARY REFERENCES IN BIRD STUDIES

¿Por qué tú no los citas? – La omisión de referencias originales relevantes en estudios de aves

RICARDO A. FIGUEROA

Escuela de Graduados, Facultad de Ciencias Forestales y Recursos Naturales, Universidad Austral de Chile, Valdivia, Chile.

Correspondencia, ra_figueroa_rojas@yahoo.com

RESUMEN.- La revisión de manuscritos por colegas pares parece ser la mejor manera conocida para mantener la calidad y rigor de las publicaciones científicas. No obstante, este proceso no siempre garantiza que los artículos publicados estén libres de omisiones significativas. En mi experiencia personal como revisor de manuscritos de revistas ornitológicas he detectado de manera frecuente importantes omisiones de referencias originales relevantes. Más aún, he detectado este tipo de omisiones en artículos ya publicados en varias revistas ornitológicas prestigiosas. Incluso, algunos autores han omitido artículos relevantes publicados previamente en la misma revista en la cual ellos posteriormente publicaron. En todos estos casos es claro que los autores no fueron suficientemente diligentes en la búsqueda de literatura relevante para su estudio. Debido a que la omisión de referencias claves afecta la integridad del conocimiento científico, debemos hacer todo lo posible para prevenir la omisión accidental o intencional de referencias relevantes. Para este propósito, los investigadores más experimentados deben instruir a los investigadores jóvenes sobre la manera apropiada para seleccionar referencias relevantes y sobre las dimensiones éticas de citar, y los autores necesitan poner tanto cuidado en la citación de referencias como el que dedican al resto del manuscrito. También recomiendo pedir a colegas expertos que revisen tu manuscrito antes de enviarlo a la revista elegida. A menudo, esto último da fructíferos resultados.

Manuscrito recibido el 30 de junio de 2014, aceptado el 24 de julio de 2014.

“Those who are unaware because they are lazy or refuse to move outside a trendy paradigm are culpable, I think, but those who are unaware because they have not come across a particular paper or have not spoken to the right person are not”

(Earl D. McKoy 1995).

Advancement of knowledge of the natural history and ecology of wildlife would not be possible without biologists' never-ceasing curiosity to understand more about the world in which we live and their enthusiasm for sharing their results in scientific journals. But the latter is not an easy task. Scientific writing is one of the most difficult forms of writing because it involves writing with accuracy, precision, clarity, and brevity in a highly rigid format giving little room for flexibility (Day 1998, Carraway 2007, Branch & Villarreal 2008, Brennan 2012). To achieve this, a manuscript must be rewritten several times and, ideally,

be critically revised by experienced colleagues before being submitted to the elected journal (Brennan 2012). Once a manuscript has been submitted to a scientific journal, it must necessarily be subject to peer review to detect flaws and improve its quality, and on occasion successive peer reviews may be necessary (Day 1998, Parkes 1998, Carraway 2009, Thompson 2010). Although peer review can often be very frustrating for many young authors (Carraway 2009, Walbot 2009, Lopez de Casenave 2010, Robertson 2011), to date it appears to be the best known manner for maintaining quality and rigor in scientific publishing

(Parkes 1998, Carraway 2009, Brennan 2012, Perry *et al.* 2012, Shepherd 2012).

Nonetheless, all barriers imposed by the scientific publishing system are not always a guarantee that published articles are free from significant failures or omissions (Todd *et al.* 2007, Walbot 2009). One such case is the omission of relevant or key primary references which I define here as those references strongly linked to the core aspects of the manuscript, and whose relevance is independent of the journal's prestige where it is published and its supposed quality as measured by scientometric tools such as citation indexes (see Lawrence 2007, 2008, Farji-Brener 2012, 2013, and Oesterheld 2013 for more discussion). Of course, relevance of a particular reference can be related to one or several aspects of the manuscript, including gained knowledge itself, testing of hypotheses, support for theories or conceptual definitions, and justified use of methods, techniques, instruments or statistics (Neville 2012).

Despite the central role of referencing (i.e., practice of acknowledging in a scientific/academic text the intellectual work of others) and citation (i.e., presentation of a supporting source in the body of text; sensu Neville 2012), citing references is often taken lightly during the process of manuscript preparation and review (Todd *et al.* 2007, Neville 2012). In my personal experience as a manuscript reviewer in ornithological journals, I have frequently detected important omissions of relevant primary references, and I have recommended that authors include those key references. On all those occasions, I have listed references in detail to better guide authors. Wisely, the authors have followed such recommendations, and their published papers have been cleared of potential failures or biases. Of course, I also have received on some occasions this recommendation from colleagues and reviewers. In these cases, peer review has done its duty and it has avoided a potential damage to the integrity of scientific knowledge.

In contrast, the omission of a key reference in an already published paper could have multiple and irreversible negative consequences for the integrity of scientific knowledge. Some of the consequences are: (i) creation of an embarrassing situation and discrediting of a manuscript's authors, (ii) discrediting of the peer review system, (iii) creation of a "blind spot" that prevents other researchers from quickly and easily visualizing key articles, (iv) diminishing of credibility of bibliometric systems because those relevant references that are not credited in papers are not counted, and non-relevant references that are cited in papers are counted, (v) diminution of the "weight" of individual scientists and their institutions because article citations are used as metrics of researcher productivity, and most importantly, (vi) generation of incomplete

and biased knowledge (some of these points are further discussed in Harzing 2002, Todd & Ladle 2008, Nature Chemical Biology 2010 and Nature Cell Biology 2011a). Thus, our responsibility as scientists is to pay careful attention during manuscript writing to ensure referencing/citation quality and appropriate assignment of credit in published papers (Harzing 2002, Wlodawer 2005, Nature Cell Biology 2009), and thereby, maintain the integrity of the scientific knowledge.

Are there lazy authors among us?

Surprisingly I have detected omissions of relevant primary references in articles published in a number of recognized ornithological journals. More surprising is the fact that some authors have omitted primary articles previously published in the same journal in which they later published. In these cases it is clear that authors were not sufficiently diligent in seeking primary literature for their study (McKoy 1995). In my opinion, a golden rule that authors should follow is to confirm whether any information relevant to the investigation has previously been published in the journal they have chosen. In addition, taking into account the huge advance in search engines of scientific literature on the Internet (Nature Cell Biology 2003, Carraway 2009), I think there is no excuse for not carrying out a comprehensive and rapid search of information that may be directly related to the bird study. In fact, there are at least three recognized and powerful search engines for scientific literature, including avian studies: Google Scholar, Thomson Reuters Web of Knowledge, and Elsevier Scopus (Harzing 2007).

Discredit of "old" literature

A particularly deplorable fact in the omission misconduct is the discredit of past literature (Peters 1991, McKoy 1995). According to Belovsky *et al.* (2004) it has been a frequent misconduct in ecology. Some ecologists believe that because papers or books are more than a decade old they are obsolete (Belovsky *et al.* 2004). I myself have heard this unfortunate comment from some national colleagues. Worse, some authors propose an idea or information as novel without recognizing that the same idea or information was already developed or documented much earlier in well-known past papers or books (McKoy 1995, Belovsky *et al.* 2004). In this scenario, despite their significant contribution, old naturalist papers or books are at risk of being absolutely despised.

Obstacles and solutions for successfully getting key primary references

Irrespective of identifying key primary references of interest throughout the literature or by searching

engines, I recognize that there are still some obstacles to effectively retrieving such references, whether in the printed or digital version. Many universities have limited subscriptions both to printed and electronic journals thereby blocking the access by researchers to a number of key references, particularly of seminal works (Lawrence 2008). This is especially evident in developing countries where universities have limited funds to afford full-text access to all journals required by researchers and academics. Such a disappointing fact can promote detrimental consequences for the integrity of scientific knowledge. First, authors simply can avoid or overlook referencing a particular study because they do not have access to the original source. Although more honest authors may attempt to rely on information in abstracts, this clearly has immense limitations (Todd & Ladle 2008).

Second, authors can prefer to read and cite reviews or other papers (Todd *et al.* 2007, Lawrence 2008). Such a practice can attribute findings or original ideas to secondary rather than to primary sources thereby diverting attention from the really original information and distorting the readers' perception (Belovsky *et al.* 2004, Todd *et al.* 2007). Fortunately, at the current time myriads of key primary papers in ornithology can be freely accessed by multiple alternative ways on the Internet including the journal's electronic database, paper banks, and authors', private institutions', governments', university's, museums' or collaborative global projects' websites (Appendix 1).

Lastly, in the present days you always can request key papers directly from the author, or solicit it from colleagues that have access to them. From an ethical point of view, in the extreme case that a relevant primary reference could not be accessed in any way, perhaps authors should declare it to editors and reviewers when submitting manuscripts, and to readers when articles are published.

Are the reviewers also responsible for omissions?

Technically yes. It is assumed that reviewers are selected by editors or authors because they have gained a reputation for being genuine experts in a research field that is central to a manuscript that was submitted (Todd *et al.* 2007, Brennan 2012, Perry *et al.* 2012). Then, selected reviewers should know well the available literature within their research field (Todd *et al.* 2007); if not, they should verify if there is additional primary literature beside those presented by authors.

It should be remembered that all participants in the scientific publication process need to ensure that the citation network of the scientific literature is as complete and accurate as possible (Nature Chemical Biology 2010). However, I believe that the main responsibility lies with the authors as they are the ones who should ensure that

their manuscript has the fewest flaws and, hence, facilitate the work of reviewers and editors (Todd *et al.* 2007, Robertson 2009). Authors should be aware that currently many qualified reviewers might be too pressed with academic and research activities as a result of following the productivist or competitive paradigm of the modern science (Adler & Harzing 2009). In addition, while the number of manuscript submitted for publication in scientific journals has increased substantially, there are difficulties in finding good reviewers (Grossman 2014). So, willing enthusiastic but overworked reviewers could fail to detect important omissions.

On the other hand, also it is assumed that reviewers are selected for being honest experts. Unfortunately, some reviewers could urge to authors to ignore important papers in a research field (Székely *et al.* 2014). In such cases, authors should stand firm if they are convinced that a reference is relevant for its paper.

Am I overstating the omission misconduct?

In most cases information provided by the authors is so robust that the manuscript might not be greatly weakened by the omission of a relevant article. However, it is undeniable that such an omission ultimately will distort the perception of readers of the information provided (Belovsky *et al.* 2004, Todd *et al.* 2007). In addition, all researchers have the legitimate right to ensure that their scientific contributions be recognized and made public through citation by their peers (Schmutz 1992, CSEPP 2009). As part of the scientific/academic community, we must be diligent in developing greater transparency and accessibility for our works (Woodgett 2012).

From my viewpoint, the scientific published knowledge is a common good and scientists should ensure the integrity of such knowledge. A simple way to do it is to give credit to relevant original works. Early, Ziman (1984) states that "science is cumulative and progressive...It is built very largely upon previous science, whether by extension or by critical reassessment. Hence every new contribution must make full reference to the facts and theories on which it claims to be based". Or, in the words of Carraway (2009), "science is made of building blocks, that is, one piece of knowledge leads to or combines with another piece ad infinitum". The integrity of scientific knowledge may also be viewed as a network where individual articles are nodes of information (Nature Chemical Biology 2010) and citations are links that ensure the connection and feedback among nodes and, hence, of the whole network. Maintaining this scientific knowledge network depends on honesty, ethical responsibility and good citation practices of authors (CSEPP 2009). Thus, we must do everything possible to prevent the accidental

or intentional omission of key references.

What must we do to effectively guarantee good referencing/citation practices?

Undoubtedly, the editorial process of scientific review is susceptible to errors (Smith 2006, Székely *et al.* 2014). Fortunately, science is also a collaborative and self-correcting enterprise where errors or omissions may be corrected by the same authors or pointed out by other researchers (Siegel 2008, Carraway 2009, Woodgett 2012, Székely *et al.* 2014).

Because becoming a proficient and responsible author requires much practice, considerable effort, and experience, young scientists should be instructed on good citation practices (Siegel 2008, Carraway 2009, Brennan 2012, Neville 2012). To this end, two important steps should be followed: (i) senior investigators need to teach young scientists the appropriate ways to select pertinent references and advise them on the ethical dimensions of citation, (ii) authors need to put as much care into selecting and accurately citing references as they devote to the rest of their manuscripts (Belovsky *et al.* 2004, Todd *et al.* 2007, Nature Chemical Biology 2010, Nature Cell Biology 2011b, Neville 2012). This implies at least two ethical obligations: (i) authors should perform comprehensive literature searches to identify relevant references that may need to be cited, and (ii) all authors should have read and discussed the candidate references to ensure that they are the most appropriate choices (Harzing 2002, CSEPP 2009, Nature Chemical Biology 2010). For some additional general guidelines about good referencing/citation practices see also Harzing (2002).

I also recommend that young authors read in detail the bibliographies of relevant papers where other key papers can be cited, and of course, read completely those papers to better evaluate them (Simkin & Roychowdhury 2003, Lawrence 2008). Another key thing I recommend is to ask expert colleagues to review manuscripts before submitting manuscripts to the chosen journal. I have often practiced this with fruitful results. Perhaps you can think that all this may take too long, but after all if you are an authentic scientist or professional you need to give yourself enough time to read, think and reflect about how we work and our true role in the scientific and academic community (McKoy 1995, Belovsky *et al.* 2004, Slow Science Academy 2010, Lutz 2012).

ACKNOWLEDGMENTS.- I thank E.S. Corales Stappung for her encouragement during the writing of the manuscript. D. Haughney reviewed the English language and improved an early version of the manuscript. I deeply thank Joe Schmutz for enlightening and encouraging com-

ments. A Spanish version of the manuscript can be directly requested from the author.

LITERATURE CITED

- ADLER, N. J. & A. W. HARZING. 2009. When knowledge wins: transcending the sense and nonsense of academic rankings. *Academy of Management Learning and Education* 8: 72–95.
- BELOVSKY, G. E., D. B. BOTKIN, T. A. CROWL, K. W. CUMMINS, J. F. FRANKLIN, M. L. HUNTER, JR., A. JOERN, D. B. LINDENMAYER, J. A. MACMAHON, C. R. MARGULES & J. M. SCOTT. 2004. Ten suggestions to strengthen the science of ecology. *BioScience* 54: 345–351.
- BRANCH, L. C. & D. VILLAREAL. 2008. Redacción de trabajos para publicaciones científicas. *Ecología Austral* 18: 139–150.
- BRENNAN, L. A. 2012. Editorial guidance and wildlife science: the roles of wildlife society bulletin authors, associate editors, and review. *Wildlife Society Bulletin* 36: 392–398.
- CARRAWAY, L. N. 2007. Content and organization of a scientific paper. *American Midland Naturalist* 157: 412–422.
- CARRAWAY, L. N. 2009. Ethics for and responsibilities of authors, reviewers and editors in science. *American Midland Naturalist* 161: 146–164.
- CSEPP (Committee on Science, Engineering, and Public Policy). 2009. On being a scientist: a guide to responsible conduct in research. Third Edition. National Academies Press, Washington, D.C. 63 pp.
- DAY, R. A. 1998. How to write and publish a scientific paper. Fifth edition. Oryx Press, New York.
- FARJI-BRENER, A. G. 2012. El valor de tener muchas citas. *Ecología Austral* 22: 215–220.
- FARJI-BRENER, A. G. 2013. Tengo una cita: respuesta a Martín Oesterheld. *Ecología Austral* 23: 74–76.
- GROSSMAN, G. D. 2014. Improving the reviewing process in ecology and evolutionary biology. *Animal Biodiversity and Conservation* 37: 101–105.
- HARZING, A. W. 2002. Are our referencing errors undermining our scholarship and credibility? The case of expatriate failure rates. *Journal of Organizational Behavior* 23: 127–148.
- HARZING, A. W. 2007. Publish or Perish. www.harzing.com/pop.htm
- LAWRENCE, P. 2007. The mismeasurement of science. *Current Biology* 15: R583–5.
- LAWRENCE, P. 2008. Lost in publication: how measurement harms science. *Ethics in Science and Environ-*

- mental Politics 8: 9–11.
- LOPEZ DE CASENAVE, J. 2010. El Hornero despliega sus alas. *Hornero* 25: 49–53.
- LUTZ, J. 2012. Slow science. *Nature Chemistry* 4: 588–589.
- MCKOY, E. D. 1995. The costs of ignorance. *Conservation Biology* 9: 473–474.
- NATURE CELL BIOLOGY. 2003. Editorial procedures reviewed. *Nature Cell Biology* 7: 583–584.
- NATURE CELL BIOLOGY. 2009. Credit where credit is due. *Nature Cell Biology* 11: 1.
- NATURE CELL BIOLOGY. 2011a. Combating scientific misconduct. *Nature Cell Biology* 13: 1.
- NATURE CELL BIOLOGY. 2011b. Reviewing referencing. *Nature Cell Biology* 13: 109.
- NATURE CHEMICAL BIOLOGY. 2010. On citing well. *Nature Chemical Biology* 6: 79.
- NEVILLE, C. 2012. Referencing: principles, practice and problems. *RGUHS Journal Pharmaceutical Sciences* 2: 1–8.
- OESTERHELD, M. 2013. El valor de tener muchas citas. Un comentario. *Ecología Austral* 23: 70–73.
- PARKES, K. C. 1998. On the role of the referee. *Auk* 115: 1079–1080.
- PERRY, G., J. BERTOLUCI, B. BURY, R. W. HANSEN, R. JEHL, J. MEASEY, B. R. MOON, E. MUTHS & M. A. L. ZUFFI. 2012. The “Peer” in “Peer Review”. *African Journal of Herpetology* 61: 1–2.
- ROBERTSON, M. 2009. What are journals for? *Journal of Biology* 8: 1.
- ROBERTSON, M. 2011. Pit-bull reviewing, the pursuit of perfection and the victims of success. *BMC Biology* 9: 84.
- SCHMUTZ, J. K. 1992. Hamerstrom science from a “gaboon’s” point of view. *Journal of Raptor Research* 26: 206–210.
- SMITH, R. 2006. Peer review: a flawed process at the heart of science and journals. *Journal of the Royal Society of Medicine* 99: 178–182.
- SHEPHERD, P. R. 2012. How can we make publishing less painful? *Biochemical Journal* 443: 1.
- SIEGEL, V. 2008. The promise of peer review. *Disease Models and Mechanisms* 1: 73–77.
- SIMKIN, M. V. & V. P. ROYCHOWDHURY. 2003. Read before you cite! *Complex Systems* 14: 269–274.
- SLOW SCIENCE ACADEMY. 2010. The slow science manifesto. slow-science.org
- SZÉKELY, T., O. KRÜGER & E. T. KRAUSE. 2014. Errors in science: the role of reviewers. *Trends in Ecology & Evolution* 29: 371–373.
- THOMPSON, F. R. 2010. How to write more effective reviews. *Journal of Wildlife Management* 74: 1419–1420.
- TODD, P. A. & R. J. LADLE. 2008. Hidden dangers of a ‘citation culture’. *Ethics in Science and Environmental Politics* 8: 13–16.
- TODD, P. A., D. C. J. YEO, D. LI & R. J. LADLE. 2007. Citing practices in ecology: can we believe our own words? *Oikos* 116: 1599–1601.
- WALBOT, V. 2009. Are we training pit bulls to review our manuscripts? *Journal of Biology* 8: 24
- WLODAWER, A. 2005. Giving credit where credit is due. *Nature Structural and Molecular Biology* 12: 634.
- WOODGETT, J. 2012. We must be open about our mistakes. *Nature* 489: 7.
- ZIMAN, J. 1984. An introduction to science studies: the philosophical and social aspects of science and technology. Cambridge University Press, U.S.A. 205 pp.

Appendix 1. Some online sources to freely download primary references in ornithology.

Journals

Anales del Instituto de la Patagonia	umag.cl/facultades/instituto/anales
Auk	sora.unm.edu
Boletín Chileno de Ornitología	aveschile.cl
Boletín Informativo UNOP	sites.google.com/site/boletinunop/
Condor	sora.unm.edu
Chinese Birds	chinesebirds.net
Ecología Austral	ecologiaaustral.com.ar
Gayana Zoología	www2.udec.cl/gayana/
Hornero - Revista de Ornitología Neotropical	avesargentinas.org.ar

Huitzil - Revista Mexicana de Ornitología	huitzil.net
Journal of Field Ornithology	sora.unm.edu
Journal of Raptor Research	sora.unm.edu
Notulas Faunísticas	fundacionazara.org.ar
Nuestras Aves	avesargentinas.org.ar
Ornitología Neotropical	sora.unm.edu
Ornithological Monographs	sora.unm.edu
Open Journal of Ecology	scirp.org/journal/oje/
Open Ornithology Journal	benthamscience.com/open/tooenij
Plos One/Plos Biology	plosone.org
PODOCES, West & Central Asian Ornithological Journal	wesca.net
Raptor Conservation	rrrcn.ru/en/archives/19556
Revista Brasileira de Ornitologia	ararajuba.org.br
Revista Chilena de Historia Natural	rchn.biologiachile.cl
Revista Historia Natural	fundacionazara.org.ar
Revista de Ornitología Colombiana	ornitologiacolombiana.org
Studies in Avian Biology	sora.unm.edu
The Canadian Field-Naturalist	canadianfieldnaturalist.ca
Wilson Bulletin	sora.unm.edu
Zoological Studies	zoolstud.sinica.edu.tw
Social Network/Paper Repositories	
Academia.edu	academia.edu
Research Gate	researchgate.com
University Libraries	
University of Laussane, Department of Ecology and Evolution	unil.ch/dee/page59709_fr.htm
University of Nebraska Lincoln	digitalcommons.unl.edu
University of Nuevo México	sora.unm.edu
Research Centers	
Center for Advanced Studies in Ecology and Biodiversity (CASEB)	bio.puc.cl/caseb ^a
Centro de Estudios Avanzados en Zonas Áridas (CEAZA)	ceaza.cl
Centro para el Estudio y Conservación de las Aves Rapaces en Argentina (CECARA)	cecara.com.ar
Instituto de Ecología y Biodiversidad (IEB)	ieb-chile.cl
Museums	
American Museum of Natural History (AMNH)	digitallibrary.amnh.org
Government Organisms	
US Forest Service	treesearch.fs.fed.us/pubs
USGS Forest and Rangeland Ecosystem Science Center (FRESC)	fresc.usgs.gov
Private Organisms	
Peregrine Fund Global Raptor Information Network (GRIN)	grin.biblio.globalraptors.org
Collaborative Projects	
Biodiversity Heritage	biodiversitylibrary.org
Internet Archive	archive.com

Scientific Electronic Library Online (SCIELO)

scielo.org

Working Group

The World Working Group on Birds of Prey and Owl (WWGBP)

raptors-international.de

Author Websites

Matthew Giovanni

sites.google.com/site/matthewgiovanni

Erki Körpimäki

users.utu.fi/ekorpi/index.htm

Vicenzo Penteriani

vincenzopenteriani.org

^aRecently disabled