

Evolutionary Perspectives in Publications Across Subfields of Psychology

Hart, C., Morley, S., & Herzog, L.

Texas Woman's University

ABSTRACT

Across time, there has been variability in the degree to which evolutionary perspectives and explanations have been integrated within the prevailing theoretical perspectives in psychology as a whole and within the various subfields of psychology. In the current study, we explored recent (2004-2013) publication rates of papers presenting evolutionary perspectives within the top journals in eight sub-disciplinary areas of psychology. We selected the journals with the highest impact factor ratings in each sub-disciplinary area and searched for publications within those journals that utilized evolutionary-relevant terms (e.g., evolution, natural selection, etc.) in their abstracts. While the general experimental and multidisciplinary journals had the highest rates of evolutionary-themed publications, the applied areas had the lowest rates. Overall, a rather modest proportion of recent publications in psychology's top journals integrate evolutionary perspectives.

KEYWORDS

Evolutionary Psychology, Publications, Journal

Evolutionary theory has been integrated into psychological explanations since the publication of Darwin's *On the Origins of Species*, in which he wrote, "In the distant future I see open fields for far more important researches. Psychology will be based on a new foundation, that of the necessary acquirement of each mental power and capacity by gradation." (Darwin, 1859, p. 449). After reading Darwin's work, the eventual founder of the first psychological laboratory, Wilhelm Wundt, used evolutionary theory to develop a comparative analyses of consciousness between species and a theory of the evolution of human morals; however, Wundt seemed to hold fast to Lamarckian views of human evolution and rejected the Darwinian concept of blind evolution by random variation and natural selection (Richards, 1987).

In the United States, early psychology also incorporated evolutionary perspectives. William James embraced the Darwinian concept of evolved human instincts (James, 1890), and James Baldwin (1895) called for integrating evolutionary theory with psychology. In the early decades of the 1900s, however, behaviorist traditions rose to the forefront and held great influence over the scientific zeitgeist of psychology for decades. Though evolutionary perspectives were

relegated to the periphery, a search through the historical ledger of psychological publications reveals a persistent presence of evolutionary perspectives in the field across the last century.

With the emergence of sociobiology in the 1970s (Wilson, 1975) and evolutionary psychology in the 1980s and beyond (Barkow, Cosmides, and Tooby, 1992; Buss, 2005; Cosmides and Tooby, 1987; Daly and Wilson, 1988; Pinker, 1997), evolutionary thought has come to play a more prominent role in mainstream psychological thought.

Even though evolutionary psychology is an established approach in the field of psychology today, it is far from being the widespread meta-theory it has become in the field of biology (Confer, Easton, Fleischman, Goetz, Lewis, Perilloux, & Buss, 2010; Cornwell, Palmer, Guinther, & Davis, 2005). In 1987, reflecting on the idea that evolutionary theory might revolutionize the social sciences, Cosmides and Tooby (p. 278) wrote, “this is a revolution still waiting to happen.” Thirty years later, while evolutionary psychology’s influence has grown, it would seem that proponents of evolutionary perspectives are still waiting for this revolution to occur. While some argue that evolutionary theory’s ascension to the grand meta-theory of psychology is only a matter of time (Goetz, Shackelford, & Platek, 2009), others see fundamental problems that might prevent evolutionary perspectives from gaining such momentum in the field (Goldfinch, 2015). In any case, meta-theoretical unification, evolutionary or otherwise, is absent in the field, leaving the landscape of psychology as disjointed as ever.

If not universally adopted, evolutionary psychological perspectives are certainly part of contemporary mainstream psychology. There are several peer-reviewed journals (e.g., *Evolutionary Psychology*, *Evolutionary Psychological Science*, and *Evolutionary Behavioral Sciences*) and many books dedicated to evolutionary psychology (e.g., *The Blank Slate*, *The Moral Animal*, and *The Evolution of Desire: Strategies of Human Mating*). There are a number of prominent professional organizations with an evolutionary psychological focus (e.g., Human Behavior and Evolution Society and Northeastern Evolutionary Psychology Society). A growing number of colleges offer evolutionary psychology courses, and there are numerous graduate programs specializing in evolutionary psychology. While not universally embraced, evolutionary psychology has a solid foothold in the field.

It is not clear whether evolutionary perspectives have been integrated to the same degree in every sub-disciplinary area of psychology. It might seem logical that some sub-disciplinary areas with theoretical roots in the biological sciences may have embraced evolutionary concepts to a greater degree than other areas more theoretically rooted in social constructionism and what some have termed the standard social science model (Tooby and Cosmides, 1992). Fitzgerald and Whitaker (2010) argued that psychologists in some areas of psychology tend to embrace evolutionary perspectives more often than those in other sub-disciplinary areas, but no empirical analysis has evaluated the relative penetration of Darwinian theories into the various subfields of psychology.

The purpose of this study was to examine whether there is variability in the degree to which evolutionary perspectives have been integrated into the various sub-disciplines of psychology. Using a descriptive analysis, we explored the relative

publication rates of papers utilizing evolutionary explanations and approaches within the top journals in the various subfields of psychology.

METHODS

Materials and Procedures

Using the 2013 Journal Citation Reports (JCR) impact factor scores for journals, we identified the five journals with the highest impact factor ratings within the psychology subfields. JCR organized journals into several subfields that they created, including social/personality, physiological, developmental, cognition/emotion, clinical/counseling, applied/industrial organizational, general experimental, and general multidisciplinary. This yielded a set of 40 journals (see Table 1) in which we assessed the publications dealing with evolutionary psychology themes.

We used the American Psychological Association's PsycINFO abstract database to conduct an examination of publications between 2004 and 2013 for each of the 40 journals for evidence of the integration of evolutionary perspectives. Specifically, we searched for the use of the terms: *evolutionary*, *evolution*, *Darwin*, *Darwinian*, and *natural selection* in journal abstracts and keywords. We conducted the exploration by using search criteria in the PsycInfo database. When target articles were detected, we verified that they were indeed using the terms in the context of explanations based on the Darwinian theory of evolution through natural and sexual selection processes. Articles that were using terms such as evolution in a non-Darwinian context were excluded. Furthermore, database matches based on terms associated with the author's institutional affiliation, addresses, journal name, etc., were excluded (e.g., Center for Evolutionary Studies).

Five journals from our original list of 40 were removed and were replaced by the journal with the next highest JCR impact rating. The journal, *Kindh Entwickle*, was removed because of complications related to translating the original text from German to English. *Monographs of the Society for Research in Child Development* was removed because the journal typically publishes only one monograph per issue. *Advances in Experimental Social Psychology* was removed because, for the years in question, the journal only published six articles per year. *Behavioral and Brain Sciences* was removed because commentary on the primary articles makes up a disproportionate number of the publications represented by that journal (often around 20 commentaries per primary article). *Evolution and Human Behavior* was removed because, while a general experimental journal with a very high impact rating, the entire focus of the journal is on evolutionary psychology topics, which would have skewed the results of our analysis considerably.

In order to establish the validity of the evolutionary search terms we selected, we evaluated their effectiveness in detecting evolutionary themes within three journals that exclusively publish articles dealing with evolutionary topics: *Evolutionary Psychology*, *Evolution & Human Behavior*, and *Evolutionary Behavioral Sciences* (previously titled *Journal of Social, Evolutionary, and Cultural Psychology*).

We searched the 2013 publication year using our search terms. *Evolutionary Psychology* had a total of 79 publications of which we detected 39 (49%) using our search terms; *Evolution & Human Behavior* had 64 publications of which we detected 31 (48%); *Evolutionary Behavioral Sciences* had 37 publications of which we detected 22 (60%). For all three journals combined, there were 180 publications in 2013 of which we detected 92 (51%). While this detection rate may seem low given that 100% of the articles actually dealt with evolutionary concepts, it is not surprising when one considers that the authors need not use such general terms such as natural selection, Darwinian, or evolutionary when presenting highly technical concepts and findings to an audience well-versed in evolutionary sciences. In any case, this analysis does suggest that our search methodology does fail to detect a sizeable proportion of evolutionary-themed publications.

RESULTS

PsycINFO indicated that the 40 journals that were selected for our analysis had 41,705 total publications from 2004 through 2013. Using our evolutionary search terms, we detected that 675 (1.62%) had evolutionary themes in their abstracts and keywords. There was considerable variability in the proportion of evolutionary-themed publications across sub-disciplinary areas (see Figure 1). A chi-square analysis confirmed a significant difference in occurrence of evolutionary psychology terms between the eight sub-disciplinary journal groups ($\chi^2(7) = 439.56$, $p < .001$). Notably, the applied/industrial organizational and the clinical/counseling journals presented evolutionary psychology perspectives much less frequently than other areas of psychology, with the social/personality and general/multidisciplinary sub-disciplinary journal publishing the highest proportions.

DISCUSSION

The results of this study show that while evolutionary psychological perspectives have achieved inroads in the field, the presence is still small, and there is considerable variability in the degree to which this theoretical approach is being presented in the publications across sub-disciplinary areas. In our analysis, the overall detection rate of evolutionary psychology themes in the journals we examined was 1.62%. This number is possibly an underestimate of the actual number of publications dealing with evolutionary concepts. As we showed in validating our search methods, a portion of the publications in evolutionary journals were not detected. Thus, we probably failed to detect every occurrence of evolutionary-themed publications in the psychology journals examined in this study. Even if we failed to detect all the evolutionary-themed publications, our analysis would still allow us to explore the relative publication rates across sub-disciplinary areas.

Assuming we did detect a large proportion of the evolutionary-themed publications, a rate of 1.62% seems low at first glance. In order to generate a point

of comparison for the publication rates of evolutionary perspectives, we analyzed the publication rates of evolutionary themes in two prominent biology journals for the same time period. *Current Biology*, a leading biology journal with an ISI impact rating of 9.92, had 30,029 publications from 2004-2013. Of those publications, 3995, or 13%, used the word *evolution* in their abstracts. Similarly, *PLOS Biology*, with an impact rating of 11.77, had 9182 publications, and 1282, or 14% of those publications contained the word “evolution.” Therefore, it seems that the psychology journals we examined presented evolutionary themes much less often than prominent biology journals, but even in biology journals, the terms we used are infrequently presented directly.

The low occurrence of evolutionary themes in the psychology journals may simply be an issue regarding the typical scale of analysis in psychology. It would be a bit tedious and beyond a useful scope to explain the evolution of the nervous system when reporting the neural pathways activated during a certain behavior or the most effective psychotherapy approaches, and such an explanation might do very little in communicating the significance or context of the findings. This scale of analysis argument may also explain the dearth of evolutionary terms in the biology journals mentioned previously.

Conceivably, many psychologists accept that behavior and mental processes are often the adaptive product of an evolved nervous system, yet their explorations and analysis of psychological phenomena focus on more proximal relationships. Likewise, psychologists need not explain their subject matter from a scale of analysis that deals with the principles of physics that underlie all physical matter. In psychology, evolutionary theory may be a widely accepted explanatory model that is simply not mentioned often.

An additional possible explanation for the relatively low rates of evolutionary themes in psychology publications is that many authors do not fully understand, appreciate, or accept the fundamental theoretical principles underlying evolutionary psychology. Confer and colleagues (2010) presented some of the common misunderstandings psychologists and others have about evolutionary psychology. They suggest that these misunderstandings often lead to resistance toward evolutionary explanations of human behavior. Knapp and Rasmussen (1998) presented evidence that psychology majors tend to hold narrow and inaccurate understandings of evolutionary theory, and their understandings are not necessarily refined in classes. When examining introductory psychology texts from 2000-2004, Cornwell, Palmer, Guinther, and Davis (2005) found that 80% of the texts presented inaccurate information about evolutionary psychology, and 20% of the texts presented the topic in a negative or disparaging tone. Similarly, Winegard and Deaner (2014) found that all of the undergraduate psychology textbooks dealing with sexuality and gender that they examined contained inaccurate information about evolutionary psychology. Even within social psychology, a sub-discipline that had among the highest percentage of evolutionary publications in our study, the undergraduate textbooks often deal with the topic critically, if at all (Chrisler and Erchull, 2011). A lack of consensus about the importance or validity of evolutionary psychology among psychologists seems apparent and could explain the appearance of evolutionary perspectives in less than 2% of the publications in our study.

This study was a descriptive analysis, but based on the perusal of recent publications in dedicated evolutionary psychology journals, we did anticipate that basic scientific subfields of psychology such as cognition and social psychology would have a higher proportion of evolutionary psychology publications than applied subfields such as industrial/organization, clinical, and counseling psychology. While we found that the publications from some areas of psychology deal with evolutionary themes regularly, the applied areas seem to deal with the topic quite rarely. Given that evolutionary perspectives are not universally embraced by psychologists (Confer, Easton, Fleischman, Goetz, Lewis, Perilloux, & Buss, 2010) and given that the historical traditions and contemporary theoretical orientations in the various sub-disciplinary areas of psychology are quite varied, perhaps it should be expected that the integration of evolutionary perspectives across these sub-disciplines is not uniform.

Evolutionary perspectives have been important and useful in understanding the fundamental nature of human psychology since Darwin first proposed his theories of evolution by natural selection and sexual selection. Examinations of the evolved adaptations that drive human behavior and mental processes have persisted since the founding of psychology as an independent field of study, although evolutionary perspective were relegated to the periphery for much of that history (Plotkin, 2004). Though the entrenched standard social science model that dominated psychology for much of its history has begun to yield to evolutionary perspectives over the past few decades, our data show that these inroads are modest and uneven across the field (Barkow, Cosmides, & Tooby, 1992).

REFERENCES

- Baldwin, J. M. (1895). *Mental Development in the Child and the Race: Methods and Processes*. New York: Macmillan & Co.
- Barkow, J. H., Cosmides, L., and Tooby, J. (Eds.) (1992). *The Adapted Mind: Evolutionary Psychology and the Generation of Culture*. Oxford & New York: Oxford University Press.
- Buss, D. M. (Ed.) (2005). *The Handbook of Evolutionary Psychology*. Hoboken, NJ: John Wiley & sons.
- Chrisler, J. C., and Erchull, M. J. (2011). The treatment of evolutionary psychology in social psychology textbooks. *Sex Roles, 64*, 754-757.
- Confer, J. C., Easton, J. A., Fleischman, D. S., Goetz, C. D., Lewis, D. M., Perilloux, C., and Buss, D. M. (2010). Evolutionary psychology: Controversies, questions, prospects, and limitations. *American Psychologist, 65*, 110-126.
- Cornwell, E. R., Palmer, C., Guinther, P. M., and Davis, H. P. (2005). Introductory psychology texts as a view of sociobiology/evolutionary psychology's role in psychology. *Evolutionary Psychology, 3*, 355-374.
- Cosmides, L., and Tooby, J. (1987). From evolution to behaviour: Evolutionary psychology as the missing link. In J. Dupré (Ed.), *The latest on the best: Essays on optimality and evolution* (pp. 277-307). Cambridge: MIT Press.
- Daly, M., and Wilson, M. (1988). Evolutionary psychology and family homicide. *Science, 242*, 519-524.
- Darwin, C. (1859). *On the Origin of Species by means of natural selection*. London: John Murray.
- Fitzgerald, C. J., and Whitaker, M. B. (2010). Examining the acceptance of and resistance to evolutionary psychology. *Evolutionary Psychology, 8*, 284-296.
- Goetz, A. T., Shackelford, T. K., & Platek, S. M. (2009). Introduction to evolutionary psychology: A Darwinian approach to human behavior and cognition. In S. M. Platek and T. K. Shackelford (Eds.), *Foundations in evolutionary cognitive neuroscience* (pp. 1-21). New York: Cambridge University Press.
- Goldfinch, A. (2015). *Rethinking evolutionary psychology*. New York: Macmillan.
- James, W. (1890). *The principles of psychology*. New York: Henry Holt & Company.
- Knapp, T. J., and Rasmussen, C. T. (1998). Psychology and biology students: What they know and believe about Charles Darwin. *Psychology: A Journal of Human Behavior, 25*, 39-43.
- Pinker, S. (1997). *How the mind works*. New York: W. H. Norton & Co.
- Plotkin, H. (2004). *Evolutionary thought in psychology: A brief history*. Malden, MA: Blackwell Publishing.
- Richards, R. J. (1987). *Darwin and the Emergence of Evolutionary Theories of Mind and Behavior*. Chicago: University of Chicago Press.
- Tooby, J., and Cosmides, L. (1992). The psychological foundations of culture. In Barkow, J. H., Cosmides, L., and Tooby, J. (Eds.), *The Adapted Mind: Evolutionary Psychology and the Generation of Culture* (pp. 19-136). Oxford & New York: Oxford University Press.
- Wilson, E. O. (1975). *Sociobiology: The new synthesis*. Cambridge, MA: Harvard University Press.

Winegard, B. M., and Deaner, R. O. (2014) Misrepresentations of evolutionary psychology in sex and gender textbooks. *Evolutionary Psychology*, 12, 474-508.

Appendix A

Table 1. Journals within each sub-disciplinary category with 2013 impact factor scores

Category	Journal title	Impact factor
Applied and I/O	Journal of Management	4.595
Applied and I/O	Journal of Applied Psychology	4.308
Applied and I/O	Health Psychology	3.873
Applied and I/O	Journal of Organizational Behavior	3.854
Applied and I/O	Organizational Research Methods	3.257
Clinical/Counseling	Annual Review of Clinical Psychology	9.111
Clinical/Counseling	Clinical Psychology Review	7.071
Clinical/Counseling	Psychological Medicine	6.159
Clinical/Counseling	Journal of Clinical Psychiatry	5.799
Clinical/Counseling	Journal of Abnormal Psychology	4.857
Cognition and emotion	Trends in Cognitive Sciences	12.586
Cognition and emotion	Journal of Cognitive Neuroscience	5.175
Cognition and emotion	Cognitive Psychology	4.273
Cognition and Emotion	Emotion	3.875
Cognition and Emotion	Cognition	3.162
Developmental	Journ. of the Amer. Acad. of Child & Adol. Psychiatry	6.444
Developmental	Child Development	4.718

Evolutionary Perspectives

Developmental	Development and Psychopathology	4.397
Developmental	Journal of Child psychology and psychiatry	4.281
Developmental	Developmental Science	3.888
General Experimental	Perspectives on Psychological Science	4.890
General Experimental	Psychological Science	4.431
General Experimental	Journal of Experimental Psychology: General	3.986
General Experimental	Current Directions in Psychological Science	3.929
General Experimental	Neuropsychologia	3.636
General/Multidiscipline	Annual Review of Psychology	16.833
General/Multidiscipline	Psychological Bulletin	14.457
General/Multidiscipline	Psychological Review	7.756
General/Multidiscipline	American Psychologist	6.869
General/Multidiscipline	Psychological Inquiry	4.727
Physiological	Neuropsychology Review	6.618
Physiological	Neuropsychology	3.816
Physiological	Neurobiology of Learning and Memory	3.419
Physiological	Psychophysiology	3.290
Physiological	Biological Psychology	3.225
Social/Personality	Social Cognitive and Affective Neuroscience	6.132
Social/Personality	Personality and Social Psychology Review	6.071
Social/Personality	Journal of Personality and Social Psychology	5.076

Evolutionary Perspectives

Social/Personality	Journal of Personality	2.440
Social/Personality	European Journal of Personality	2.438

Appendix B

Figure 1. Percentage of evolution-themed publications in each sub-disciplinary category from 2004-2013

