Let Us Bring Comparative Psychology Back

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This article serves as the introduction to the special issue “The State of Comparative Psychology Today” for the International Journal of Comparative Psychology. Following opening comments, citations are provided in several areas all with the goal of stimulating students and professionals to help return comparative psychology to a prominent place in psychology. The material can be used as part of a reading list for a course in comparative psychology or as independent readings. It can also be used to shape a reasoned argument why comparative psychology should become a central part of a student’s training in psychology. Sections include books, citations on the history of comparative psychology, general issues related to comparative, teaching, and ancillary material such as websites, journals, videos and a free app for android phones that teaches students how to observe behavior.

I would like to thank Dr. Heather Hill for the opportunity to edit this special issue on The State of Comparative Psychology Today for the International Journal of Comparative Psychology. As I have written previously, I believe that we have become marginalized and on the verge of becoming a footnote in the history of psychology. Although I am not voicing the popular opinion, I can point to the fact that there are few graduate programs, little to no coverage in introductory psychology texts (and by extension little to no discussion in introductory psychology classes), insufficient number of courses in comparative psychology at the undergraduate level, few teaching exercises, declining membership in Division 6 of the American Psychological Association (Behavioral Neuroscience and Comparative Psychology), and no recent textbooks in comparative psychology (Abramson, 2015a, 2015b).

With regards to textbooks, it is interesting to note that at one time psychological textbooks with the word “Comparative” in the title were a regular occurrence with texts appearing in 1894, 1898, 1908, 1914, 1928, 1935, 1936, 1940, 1942, 1951, 1964, 1966, 1970, 1971, 1973, 1978, and 1996. The last textbooks appeared in 2002 (two books) with one of the books having a second edition (2008). This gap in texts is even more striking when we consider that there has been only two comparative texts in 22 years since the 1996 text. Citations for comparative psychology texts can be found in the “Book Section” of this article.

Perhaps even more striking than the “textbook gap” are the vanishing “Comparative Psychology” entries in the Annual Review of Psychology. The home page states (http://www.annualreviews.org/journal/psych):

The Annual Review of Psychology, in publication since 1950, covers the significant developments in the field of psychology, including: biological bases of behavior, sensation and perception, cognitive processes, animal learning and behavior, human development, psychopathology, clinical and counseling psychology, social psychology, personality, environmental psychology, community psychology, and more.

Comparative psychology is not mentioned in this Annual Review description, but in the early years of Annual Review a comparative entry was common. The lack of contemporary entries, like the lack of textbooks
and coverage in introductory texts, presents our field with a problem because many students and professionals looking for a concise treatment of the current state of psychology will never know that a comparative psychology even exists or frankly, existed. To provide some data, I searched each volume of *Annual Review* from 1950-2017. The results are provided in the table below and are grim. Of 68 volumes, an entry containing the word “Comparative” in the title appeared only 19 times with 13 of these entries occurring from 1950-1967. From 1968-2017 only 6 entries appeared – a period covering 49 years!

Even these six entries could be overly optimistic. In volumes 60 (2009) and 61 (2010), the format of *Annual Review of Psychology* changed to include “categories” under which entries appeared. The comparative entries in these two volumes did not provide an overview of the field but concentrated on a particular sub-field. These two volumes represent the only time the comparative category appeared. In volume 64 (2013) there was a new category called “evolutionary psychology”. In the next volume (65/2014) this category no longer existed and the *Annual Review of Psychology* ceased using categories starting with volume 66 (2015).

<table>
<thead>
<tr>
<th>Part A: Volumes containing entries with the word “Comparative” in the title</th>
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<tr>
<th>Part B: Volumes containing no entries with the word “Comparative” in the title</th>
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<tr>
<th>Part C: Volumes containing entries related to comparative psychology but without the term “Comparative” in the title</th>
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The current state of comparative psychology is painful. After teaching comparative psychology at Oklahoma State University for 25 years, I have a number of stories about being marginalized, as many other colleagues do. In one case a fellow faculty member commented that “anyone can do what you do” despite the fact that not many other psychologists can report having worked with many species “from ants to elephants to people” over the course of a 30+ year career. Another example involved the following response by an action editor of *American Psychologist* to the original submission of an article entitled “A crisis in comparative psychology: Where have all the undergraduates gone?” (Abramson, 2015a, 2015b): the manuscript would not be sent for review because comparative psychology is, in effect, a trivial area of psychology that is just too
inconsequential to be considered for readers of *American Psychologist*. In some ways comments such as these demonstrate the lack of knowledge and respect such individuals have about comparative psychology, highlighting the state of comparative psychology.

Frankly, I do not understand why, at least in my view, our field is dying. I could not conceive of a more interesting area of psychology. As an undergraduate I worked with fish, rats, pigeons, ants, roaches, bees, humans and had the opportunity to observe monkeys. This work continued as a graduate student and now as a professional (Abramson, 2005). While much of my work focused on animal behavior, I always considered, and defined, comparative psychology as the “Application of the comparative method to problems in psychology.” As such, the world is literally our laboratory and no psychological problem – whether applied, basic and/or theoretical – is beyond our scope (Abramson & Lack, 2014). We have a unique set of experimental and philosophical skills (Muckler, 1963), which can be applied to an aspect of our field in which we search for “universal rules of behavior” – certainly a noble enterprise.

We also have a way of thinking that is, frankly, different from other psychologists and a way of doing science that is distinctive. We routinely use concepts such as homologies, analogies, and systematic variation when considering our results and we maintain a focus on replication. If a reader would like evidence for this latter assertion one need go no further than to read the article by the Open Science Collaboration (2015). This international group of scientists sought to replicate some of the more well-known findings of selected social and cognitive psychology experiments and could not do so for 50% of the cognitive experiments and 75% of the social experiments. Their paper has been cited over 1,500 times. All one has to do is search Google using the phrase “problems of replication in psychology” and, if this can be believed, 42,000,000 items are listed – and comparative psychology is considered obsolete?

Our unique way of approaching a topic allows us to contribute to areas as diverse as cultural anthropology, political science, neurobiology, computer engineering, app development, cross-cultural psychology, animal – human interactions, law, agriculture, enrichment, philosophy, mathematical modeling, history of science, learning, perception, and a host of others – and comparative psychology is considered obsolete? A recent special issue in *The International Journal of Comparative Psychology* on the intersection between comparative psychology and clinical psychology illustrates the influence of comparative psychology on today’s advancements in clinical psychology (https://escholarship.org/uc/uclapsych_ijcp Vol 30).

In my view, there is no psychology as important as comparative psychology. The skills and perspective of a comparative psychologist would make them a highly valued member of any research team. Comparative psychology should be taught not only at the college level but in high school as well.

In addition to the skills and perspectives offered by a comparative psychologist, it is worth noting that if we consider 1879 as the founding of experimental psychology (Heidbreder, 1933), the use of the phrase “comparative psychology” appeared as early as 1858 (Weinland, 1858) – 21 years before the formal founding of psychology as a scientific discipline. Moreover, three years before the founding of psychology, Spencer (1876) published “The comparative psychology of man.” Furthermore, the first comparative psychological society was started by Mills in 1885 (Mills, 1887) just six years after the formal founding of psychology as a scientific discipline and five years before the founding of the American Psychological Association. I would also add that our field contains some of the greatest names in the history of psychology including African Americans (Abramson, 2006) and women (Scarborough & Furomoto, 1989). Comparative psychology is an endeavor worthy of respect from our peers and each other. Is all this to be forgotten?
Over the years I have been asked by many people both in the United States and abroad to provide a general list of articles and materials that may be of use in stimulating interest in comparative psychology. While there are few courses in comparative psychology, a student can create their own major and/or course of study. Such a student and their faculty advisor may not have an idea where to start – this article may help. As another example, a faculty member seeing the importance of comparative psychology may wish to integrate some material into their classes – this article will help. The material presented in this article will also be of use for those trying to convince their department to offer a course in comparative psychology.

The article presents several categories including teaching activities, books, and articles of general interest (Table 2); selected websites are also listed. This article does not claim to be exhaustive but it does contain material that I have found useful over the years and I suspect that much of the material will be on the shelves and reading lists of any comparative psychologist. Some of the material comes from the *International Journal of Comparative Psychology (IJCP)*. Unlike many publishing houses such as the American Psychological Association, scientists without access to a library are not charged fees to look at an article. The *IJCP* plays an important role as access to its articles are free world wide and the authors of the papers are not required to pay open access fees.

**Section 1: Books**

In this section I list some of the books that I have found worthwhile (Table 3). Of special interest are the early textbooks in comparative psychology. It is quite interesting to read these books and note how the field has changed over the years. Some of these books can be found on the internet by doing an on-line search and downloading them for free. These texts, and other books cited here, often contain histories of comparative psychology – especially those by Dewsbury (1984a, 1984b, 1990). Some excellent historical information can also be found in Tobach (1987). Readers interested in an Aristotelian – Thomistic view of comparative psychology can find much material in Augros and Stanciu (1987) and Wallace (1996). The encyclopedias edited by Bekoff (2004, 2007) represent just one of the many ways material can be used to stimulate interest in comparative psychology. I have also included books containing selected papers of comparative psychologists such as Theodore C. Schneirla (Aronson, Tobach, Rosenblatt, & Lehrman, 1972) and the African American Charles Henry Turner (Abramson, Jackson, & Fuller, 2003). For those readers interested in material on the “application of the comparative method to problems in psychology “can find much in Bornstein (1980). The book by Wenner and Wells (1990) describes how their careers were almost destroyed because they did not agree that the experimental evidence supported the dance language of the honey bees. This controversy continues to the present day. An interesting book that is seldom mentioned is Vance Packard’s (1950) *Animal IQ*. Packard is perhaps best known for his work on the psychology of persuasion (Packard, 1957). Another interesting book is *The naked ape* written by Desmond Morris (1967). Morris has a number of books on animal behavior. I would like to note that the classic three volume set on comparative psychology written by Warden, Jenkins, and Warner, 1935, 1940) seems to have a misprint in my copy where the year of publication of volume 3 (1936) supersedes the year of publication of volume 2 (1940).
Table 2

**Recommended Articles**


Table 3

Recommended Books


Hutchins, M. (Ed.). (2004). *Grzimek’s animal life encyclopedia: Vol 1 Lower metazoans and lesser deuterostomes 2nd edition*. Detroit: Thomson Gale. (Note: This is a multi-volume set published over a number of years.)


Section 2: Articles on the History of Comparative Psychology

Here, I cite some articles about the history of comparative psychology (Table 4). These articles cover a wide range of subjects including biographies of both American and Russian comparative psychologists such as Frank Beach (Dewsbury, 1990), Leonard T. Hobhouse (Tolman, 1987), Boris Iosifovich Khotin (Malakhovskaya, 1992), T. Wesley Mills (Murray, 1990), Douglas Alexander Spalding (Gray, 1962), Charles Henry Turner (Abramson, 2009), V. A. Wagner (Krementsov, 1992), and Robert Mearns Yerkes (Wight & Smith, 1998). Of interest is an article on the work of James McConnell (Rilling, 1996). McConnell was one of the early pioneers in using the planarian to understand the molecular analysis of learning.
Table 4

*Articles About the History of Comparative Psychology*


Greenwood, J. D. (2016). All the way up or all the way down?: Some historical reflections on theories of psychological continuity. *Journal of Comparative Psychology* 130, 205-214.


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**Section 3: General Issues**

This section contains a wide range of articles on general issues related to comparative psychology. Several of these articles are part of special issues. The material include problems (real or imagined) associated
with comparative psychology (Lockard, 1971), applications of comparative psychology (Abramson & Black, 2017), the evolution of intelligence (Bitterman, 1965a) and the identity of comparative psychology (Beckers, DeHouwer, & Dwyer, 2016; Doré, & Kirouac, 1987; Innis & Staddon, 1989; Médioni, 1987).

Table 5
Recommended Readings Regarding General Issues in Comparative Psychology

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Journal</th>
<th>Volume</th>
<th>Pages</th>
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</table>


Section 3: Teaching Comparative Psychology

I have spent a considerable portion of my career developing inquiry-based exercises for use in a comparative psychology course. Many of these articles are cited below (Table 6). Of special interest is the use of pet stores as animal and human research centers (Abramson, Huss, Wallisch, & Payne, 1999). Many of these activities are summarized in Abramson, Curb, Barber and Sokolowski (2011). A wide range of material suitable for a class in comparative psychology can be found in *Psychological Reports* including many articles that compare two or more species in the same paper (Abramson, Curb, & Barber, 2011). A paper by Varnon and Abramson (2013) describes the adaptation of the Propeller microcontroller (Parallax, Rocklin, CA) for comparative experiments. Literally, a comparative laboratory suitable for field and laboratory-based work can be developed for under $200.00 and be placed in the palm of one’s hand. The Abramson 2015b article describes several ways in which a professor can stimulate interest in comparative psychology. In addition to these articles, there are others that discuss the importance of comparative psychology for a liberal arts education (White, 2007) and activities in early comparative courses (Kline, 1899). Two exercises that interest students is
a writing exercise where students contact comparative psychologists (Abramson & Hershey, 1999) and another where comparative psychologists are turned into official United States postage stamps (Abramson & Long, 2012). Quick response codes (QR codes) can be imbedded into the stamps that lead the user, for example, to student-created websites https://comparativestamps.wixsite.com/comparativestamps). Other material can be found from time to time in the journal Teaching of Psychology and American Biology Teacher.

Table 6

Examples of Inquiry-Based Laboratory Exercises and Teaching Applications for Comparative Psychology

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year</th>
<th>Title</th>
<th>Journal</th>
<th>Pages</th>
<th>DOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abramson, C. I.</td>
<td>2015a</td>
<td>A crisis in comparative psychology: Where have all the undergraduates gone?</td>
<td>Frontiers in Psychology</td>
<td>6, 1500</td>
<td>10.2466/1PR.010.6.1500</td>
</tr>
<tr>
<td>Abramson, C. I.</td>
<td>2015b</td>
<td>A crisis in comparative psychology: Where have all the undergraduates gone?: Additional comments</td>
<td>Innovative Teaching</td>
<td>4, 7</td>
<td>10.2466/10.IT.4.7</td>
</tr>
<tr>
<td>Abramson, C. I., Becker, B., &amp; Barber, K. R.</td>
<td>2011</td>
<td>The use of board games, historical calendars, and trading cards in a history of psychology class</td>
<td>Psychological Reports</td>
<td>104, 529-544</td>
<td>10.2466/1PR0.104.2.529-544</td>
</tr>
<tr>
<td>Abramson, C. I., Hershey, D. A.</td>
<td>1999</td>
<td>The use of correspondence in the classroom</td>
<td>In L. Benjamin, B. Nodine, R. Ernst, &amp; C. Blair-Broeker (Eds.), Activities handbook for the teaching of psychology, Vol. 4 (pp. 33-36)</td>
<td>Washington, DC: American Psychological Association</td>
<td></td>
</tr>
<tr>
<td>Abramson, C. I., Becker, B., Barber, K. R., &amp; Miskovsky, C.</td>
<td>2011</td>
<td>Cost-effective laboratory exercises to teach principles in the comparative analysis of behavior</td>
<td>Journal of Behavioral and Neuroscience Research</td>
<td>9, 1-6</td>
<td></td>
</tr>
<tr>
<td>Abramson, C. I., &amp; Long, S. L.</td>
<td>2012</td>
<td>The use of Zazzle to turn historically important psychologists and movements into U.S. Postage stamps: The example of Charles Henry Turner</td>
<td>Innovative Teaching</td>
<td>1, 5</td>
<td>10.2466/1.IT.1.5</td>
</tr>
<tr>
<td>Baskin, K. E., Cushing, C. C., &amp; Abramson, C. I.</td>
<td>2013</td>
<td>Using the labyrinth as a teaching tool in psychology</td>
<td>Innovative Teaching</td>
<td>2, 1-8</td>
<td>10.2466/07.08.itt2.10</td>
</tr>
</tbody>
</table>
Section 4: Ancillary Material

This section contains a wide variety of material including journals with the word “comparative” in the title and websites. The former I have found useful in showing students that the comparative method is of value across numerous disciplines. Many of the websites listed below we have developed in our laboratory and highlight some of our work. An online search will uncover many others developed by other comparative psychologists. One site that helps students visualize experimental methods is the Journal of Visualized Experiments (https://www.jove.com/). There is also a web link to the obituary site of the American Psychological Association. This site provides citation information to the obituaries found in the American Psychologist and contains several obituaries of comparative psychologists. I have also included some YouTube videos of teaching demonstrations and research from our laboratory. One of the videos describes what we call the “Fish stick” which is a simple way of training fish. Another video shows a rattlesnake pressing a lever to regulate its temperature. A horse training video is also listed. This video is important as the experiment was controlled by the micro-controller described in Section 3. Finally, two videos are presented highlighting the importance of comparative psychology. We have also developed a free app to teach students about observing behavior. The rationale for the development of this app was to teach students how to observe behavior in aquariums, zoos, and pet stores. This app, which has been translated into English, Russian, Portuguese, and Spanish is available for android type cell phones and is free. Finally, two websites are listed where historical articles can be downloaded free of charge.
A list of resources that are available directly:

a. **Websites were historical articles and books can be download.** The first site “Classics in the history of psychology” is a resource developed by Dr. Christopher D. Green of York University in Toronto Canada. The second listing is the “Internet Archive. This was started in 1996 and has already digitized within its holdings over 11 million books and texts. The material within the website is also is freely available.

   1. Classics in the history of psychology: psychclassics.yorku.ca
   2. Internet archive: https://archive.org

b. **APA Obituary Website.** This site provides citation information to visit the American Psychologist for obituaries (http://www.apa.org/about/governance/president/published-obituaries.aspx).

c. **Journals.** Many journals publish articles on animal behavior. Some of the more well-known include Advances in Comparative Psychology, Advances in the Study of Behavior, Animal Behavior, Anthrozoos, Behaviour, International Journal of Comparative Psychology, Ethology, Frontiers in Psychology, Journal of Comparative Psychology, and Journal of Experimental Psychology: Animal learning and cognition. However, it is important to remind the reader that comparative psychology should not be restricted to the study of animal behavior. Therefore I would encourage you to ask students to look at journals with the word “comparative” in the title. Some that I have found useful include: Comparative Civilization Review, Comparative Cognition and Neuroscience, Comparative Drama, Comparative Medicine East and West, Comparative Politics, Journal of Comparative Economics, and Journal of Comparative Policy Analysis. A search on the website Web of Science Journal Abbreviation titles (http://images.webofknowledge.com/images/help/WOS/B_abrvjt.html) lists 72 journals with the word “Comparative” leading the journal’s title and 18 with the word “comparative” following the word “Journal.”


f. **Museum exhibits and Video clips.**

   Oklahoma State University Psychology Museum
   (http://psychology.okstate.edu/museum)

   The Charles Henry Turner Website:
   (http://psychology.okstate.edu/museum/turner/turnermain/html)

   Planarians in the psychology classroom:
   (http://psychology.okstate.edu/faculty/abramson/plan.html)

   Classical conditioning of proboscis extension in honey bees:
   (http://psychology.okstate.edu/faculty/abramson/beexperiment1.html)

   The use of correspondence in the classroom:
   (http://psychology.okstate.edu/faculty/abramson/corr.htm)

   PETSCOPE: Using pet stores to increase the classroom study of animal behavior:
   (http://psychology.okstate.edu/faculty/abramson/petscope.html)

   Classical conditioning of withdrawal response in the earthworm:
   (http://psychology.okstate.edu/faculty/abramson/worms.html)
A time-line of comparative psychology:
(http://comparativepsych.wixsite.com/mysite)

A history of comparative psychology in stamps:
(https://comparativestamps.wixsite.com/comparativestamps)

Operant conditioning in goldfish
(http://www.youtube.com/watch?v=FsonPCR6EZg)

Operant conditioning in the honey bee
(http://www.youtube.com/watch?v=KzT_qejHv3Y&feature=mfu_in_order&list=UL)

Advice from professors in psychology programs: Comparative Psychology
(http://www.drkit.org/psychology/)

Operant conditioning in rattlesnakes
(https://www.youtube.com/watch?v=sT996Xz-O28)

Water searching behavior in planarians
(https://youtu.be/OtZRAOqBdsU)

What is Comparative Psychology?
(https://www.youtube.com/watch?v=klzmIGITntE)

Operant conditioning in horses
(www.youtube.com/watch?v=26zKz0nbqNw&list=UUqEiHO7osHC-TMskomLvqiw)

Section 5: Conclusion

In conclusion, this article contains material useful for anyone interested in comparative psychology. The material is not exhaustive and should be supplemented by additional information specific to the reader’s interests and laboratories. I have used the materials to generate interest in comparative psychology at the both the undergraduate and graduate level. The material can also be used to craft an argument as to why comparative psychology should be returned to a place of honor. In closing, I would like to note that I would be glad to assist anyone in developing a comparative program and/or implementing any of the teaching demonstrations my laboratory has developed.
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Conflict of interest: No stated conflicts.