



Musings about the Importance of Comparative Psychology: Reflections from Undergraduate Students

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The subfield of comparative psychology has ebbed and flowed since the establishment of the field of psychology. Today, comparative psychology is taught rarely as an elective, much less as a required course within psychology departments around the United States. Based on responses to a beginning-of-semester-reflection assignment about the field of psychology, when first or second year undergraduate students were asked about their knowledge of psychology and the various fields within, most had never heard of comparative psychology. For those who had heard of comparative psychology from a high school course, the students rarely thought to mention it in their reflection. The purpose of this essay is to share the reflections of students who have completed an upper division elective comparative psychology course at a primarily undergraduate, Hispanic-serving institution. In this course, the students were asked to reflect on what they know about comparative psychology at the beginning of the course and to return to those early reflections at the end of the course. One major finding was that the majority of the students stated that this course should be a required course or a capstone for psychology as it integrates all of their required coursework together into a common experience. This synthesis enabled the students to see the importance of comparative analysis and the role that understanding animals plays in understanding humans. Comparative psychology should not simply be a historical facet of the field of psychology but should continue to play a critical role in shaping the experiences of students of psychology. Whether it is simply to make students of psychology aware of the role that animal research has in understanding almost all aspects of psychology (clinical, learning, health, development, personality, social, biopsychology, neuroscience, behavioral economics, cognition) or to highlight that investigating the same question in different subjects is valuable, comparative psychology has a vital role in our field today.

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In 2015, four years after I started teaching comparative psychology as an elective every other year or two at my home institution, I read an article written by Dr. Charles Abramson of Oklahoma State University, one of the few comparative psychologists who still goes by that designation. He had titled his paper, “A crisis in comparative psychology: where have all the undergraduates gone?” This paper (Abramson, 2015a) immediately struck a chord with me. Not only had I experienced a professional identity crisis immediately after my doctorate was granted, I was never sure about how to introduce myself. Was I a comparative psychologist, an experimental psychologist with a developmental cognitive twist, a marine mammalogist, or all of the above? I also discovered that most universities were not interested in hiring a person with my educational and research background. Although I could teach a broad range of classes as any qualified comparative or experimental psychologist should be able to do, I did not fit the typical psychology professor profile. Universities were not interested in hiring a generalist who conducted comparative psychology research, especially when it involved marine mammals. After teaching as an adjunct at five universities, I finally landed a tenure-track position at a small liberal arts university where the department could utilize my generalist skills and the area of research was open.

Over the last 20 years, I have had a number of opportunities to teach at a variety of collegiate institutions of various sizes and statuses. Each time that I attempted to propose teaching an elective in comparative psychology, I encountered resistance. The questions typically centered around what would a comparative course entail, what students would be interested in a course like that, why do students need to learn about animal behavior outside of learning or biological psychology or neuroscience? What was even more surprising to my naïve self was that these questions were often asked by individuals who also studied animals in some capacity or were psychology experts of some nature. I found myself wondering why would students not want to learn more about how cognitive abilities or social skills evolved or why there is such

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variation in mating and parenting strategies or how communication can be complex in some of the seemingly simplest animals?

Before being granted an opportunity to teach my first comparative course, entitled “Comparative Cognition,” I emphasized comparative psychology in every class I taught (and continue to do so) – introductory psychology, theories of learning, experimental psychology, developmental psychology, social psychology, cognitive psychology, social and personality development, gender, physiological psychology, advanced research methods, and even statistics! My students expect to hear at least one animal example each class period. Over the past two decades of teaching and more than 5,000 students, the overwhelming majority often mention how surprised they are at the complexity and similarities of nonhuman animals and how much they appreciated the opportunity to have their eyes opened. Thankfully, only a handful of students have voiced their annoyance about my penchant for animal examples, with only one student indicating he or she would never take another class from me because of my animal bias. Although no one likes to be told their passion is annoying, I try to consider the fact that I made enough of an impact that all of my students walked away from my courses with a greater awareness and appreciation (usually) of the world around them, including the animals that inhabit it alongside them.

To explore this anecdotal evidence a little more and to better understand the knowledge of students about comparative psychology before taking a course with me, I implemented two types of assignments in two of my courses. In my introductory psychology class, I asked students to reflect on what they know about the field of psychology. This assignment is usually turned in after the students have had an initial lecture about the field, during which I share a bit of my own personal bias about the field of comparative psychology. For my comparative psychology classes (sometimes referred to as animal behavior), I also required my students to submit a reflective essay about the field of comparative psychology specifically. Like the general psychology assignment, the comparative psychology assignment is usually submitted after our first day of class and a brief overview of the field. In both classes, students are asked to reflect on their experiences and any changes in knowledge they experienced at the end of the course. All four assignments involve free responses to specific prompts (Appendix A) and are graded with a rubric that was built around a cohesive and grammatically clean response that addresses each aspect of the prompt; content is not judged, so the students are free to share anything and everything. It should be noted that the student responses are not anonymous and likely have some degree of bias or editing of honest beliefs.

For the purpose of this essay, I have concentrated on the responses of the two most recently taught comparative psychology courses ($N = 18$; $N = 23$, respectively). The student responses were collected electronically through our learning management system, and the courses were taught with the same curriculum, assignments, and projects, which differed somewhat from the previous semesters when this course was taught. I have also shared some general findings about the initial knowledge of comparative psychology by my current general psychology classes, which had not been completed for the semester at the time of this article.

The comparative psychology course was designed to illustrate the diverse nature of comparative psychology while also synthesizing knowledge learned from multiple psychology courses, such as social psychology, learning, development, and abnormal psychology. Although not all students had taken all of these topic-specific courses prior to taking the comparative psychology course, most of students had some exposure to all topics through introductory psychology, except comparative psychology in most cases. Currently, out of 65 introductory psychology students, some of whom had taken this course in high school, only 37% ($n = 24$) mentioned either “comparative psychology” or “animal” in their initial reflections about the field of psychology. In contrast, every student mentioned either abnormal psychology, counseling psychology, or some aspect of therapy in their initial reflection about the field of psychology. A number of these students also read an article about the intersection between clinical psychology and comparative psychology for extra credit and indicated in their summaries how surprised they were to find out that research with animals could inform research about human psychological disorders. As previously mentioned in a state of the field essay by Abramson (2015a), students in psychology classes continue to not be exposed to the value of comparative psychology.

Clearly, this trend needs to be changed. After students have taken a comparative psychology class, their knowledge and comparative analysis skills change extensively; skills that the students report being transferrable to other aspects of their major and future careers. Like other upper division electives, my comparative course requires students to read primary literature and to compare and contrast different methodologies and findings. The students study all aspects of life history, including communication, mating, social structures, offspring care, social interactions, and foraging. We also touch upon more specific topics, such as development, play, cognition, different types of bias (e.g., observer bias, anthropomorphism), research designs and methodologies, data collection, and the value of zoological studies versus wild studies. My students also practice a variety of observational data collection techniques and view different animal documentaries, to which they apply their content knowledge and evaluate for bias and objective representations. Each student engages in a semester-long group project in which an animal documentary is selected for analysis of all aspects of the species' life-history and portrayal by the filmmaker. To complete this project, the students must find peer-reviewed literature of the species for each aspect examined (e.g., communication, social interactions, mating, foraging, parental care, habitat, current population status), which is then used to evaluate the information provided in the documentary. The students are asked to determine if the documentary was accurate, inaccurate, or misleading in the portrayal of the life-history information. The students also evaluate the musical score and narration throughout to determine degree of subjectivity or objectivity. Through a series of assignments, the students narrow down their findings to the 10 most interesting, egregious inaccuracies, or accurate points and present them in a written report. As a final presentation, groups present three to five themes that they believe reflect the nature of the documentary using clips from the documentary to illustrate each theme.

As summarized in Table 1, out of 41 students who completed comparative psychology across two semesters, it was clear that their knowledge of comparative psychology changed and grew over the semester. Many students were not aware of the extent of the field. Most of them discovered that it was a comparison between humans and animals to some degree, but a limited number of students were aware of possible applications of this knowledge, including improving welfare of animals and humans, recognizing that it was a multidisciplinary field, understanding the role of evolution in different aspects of behavior, or developing skills that were transferrable to their primary fields of interest. By the end of the semester, students were very clear about the purpose of comparative psychology, with almost all students reporting the experience as educational and insightful. Many students identified specific skills that they acquired as a result of being in the class, including a greater awareness about comparative psychology with some expressing a desire to pursue that direction, increased observational and research skills, and an acknowledgment that bias is inherent but should be considered at all levels, including anthropomorphism. Ultimately, many students reported that this class had opened their eyes to the integrated nature of psychology with comparative being the common denominator. In fact, several students suggested that comparative psychology should be used as a capstone course to synthesize all of the information acquired over the course of their major, as concepts from every core and elective course available in our school's curriculum were considered. Alternatively, a comparative psychology course might be a great first semester course as well, as it could set the stage for comparative analyses across the different aspects of such a diverse field.

Table 1

Themes Identified in Reflections by Students Taking a Comparative Psychology Course (Fall 2018; Fall 2019)

	Beginning of Semester		End of Semester	
	<i>f</i>	%	<i>f</i>	%
Definition ^a	38	93	24	59
Comparisons between human and animals	13	32		
Multidisciplinary field	20	49		
Educational	30	73	39	95
Human application	36	88		
Bias awareness			13	32
Insightful	23	56	35	85
Surprising information	9	22	3	7
Awareness of comparative psychology	31	76	9	22
Anthropomorphism	27	66	2	5
Excitement	2	5		
Awareness of welfare	13	32	2	5
Awareness of evolution	15	37	2	5
Transferrable skills	1	2	36	88
Research opportunities and practice	1	2	24	59
Observation practice	1	2	15	37

Note. All themes were derived from two different, but related, prompts (Appendix A) provided to the students at the beginning of the semester following a set of readings and discussions about comparative psychology and at the end of the semester once the course content was completed. The *f* represents frequency as individual students could have contributed to multiple themes. ^athe study of animals to understand humans

Comparative psychology continues to fight for its existence as a stand-alone field in psychology. Whether students, professors, academic institutions, federal agencies, or some other agent are responsible for the diminishing value of this subfield of psychology, everyone must be made aware of its value in order for it to continue to exist. It is clear that understanding animals, learning the skill of comparative analysis, and recognizing the importance of considering constructs from all aspects identified by Tinbergen (i.e., proximate and ultimate causes) are critically important in education at all levels, not just those attending college or university (Abramson, 2015a, b; Bateson & Laland, 2013; Maple & Segura, 2017; Marston, 2017; Palagi & Scopa, 2017). Knowledge of animals may be associated with better care and acknowledgment of needs both in their natural habitat and in human care. Comparative analysis allows individuals to compare and contrast multiple perspectives objectively, demonstrating strengths and weaknesses, or illustrating similarities and differences, skills that are needed desperately in today's world of politics, economics, and social justice (e.g., Abramson, 2015a, b). Finally, acknowledging innate mechanisms, developmental changes, functional adaptations, and phylogenetic history allow the synthesis of knowledge from multiple disciplines. Interdisciplinary collaboration is the only path to solve social problems; we know that these issues do not exist at one level or within a single discipline and should be informed from multiple perspectives.

Teaching courses like comparative psychology, comparative religion, comparative economics, or comparative anatomy develop critical thinking skills and the techniques that are needed to facilitate change. These are some of the skills that are being developed at primary and secondary levels, but we must continue to build upon the basic foundation by expanding knowledge. As the ability to integrate information becomes more complex and mature, comparative psychology offers multiple opportunities to illustrate the collaborative and synergistic nature of the field of psychology. Whether it is simply to make students of psychology aware of the role that animal research has in understanding almost all aspects of psychology (clinical, learning, health, development, personality, social, biopsychology, neuroscience, behavioral economics, cognition) or to highlight the value of investigating the same question in different subjects, comparative psychology has a vital role in our field today. Exposure to this topic in high school or college could lead to individuals becoming more

compassionate doctors or law enforcement agents, more insightful geneticists or chemists, or more intuitive architects or transportation designers.

Comparative psychology should not simply be a historical facet of the field of psychology but should continue to play a critical role in shaping the experiences of students of psychology. We should not allow comparative psychology to be subsumed by other fields because the name is old and not an attention-grabbing, 5-sec sound byte that entices individuals to click and make it viral. Jean Piaget acknowledged that moderately discrepant events produce the greatest changes in thinking during his investigations of cognitive development (Piaget & Cook, 1952). This belief still holds today (Longfield, 2009), and comparative psychology is one avenue by which beliefs can and should be challenged so that change can occur.

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Many thanks to all of the students who have taken a chance on comparative psychology as an elective in your psychology education. Oftentimes, you jumped in headfirst without knowing what you were getting yourself into. Sometimes you did it for the opportunity to take a class with the professor one more time, sometimes you did it because you needed it to go on an incredible field study to Roatán Honduras, and sometimes you did it simply because you were fascinated by the animal kingdom. Whatever reason you took this course, in the end, you saw the value of comparative psychology for its own merit. Your stories and thoughts have influenced your peers to take the same chance! Thank you! I appreciate the assistance of Ezequiel De La Fuente for compiling the student responses so that I could share them more generally.

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