

Review Article

Comparative Psychologys Function In Veterinary Education.

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Abstract

The benefits of comparative psychology for veterinary students and veterinary education in general are highlighted in this article. Since comparative psychology is the most ancient of the social sciences, it has amassed more than three centuries of expertise in fields including animal behavior, human-animal interactions, and research design. We look through all of the course catalogs offered by veterinary colleges in the United States to see whether comparative psychology is taught there.

Comparative psychology was not taught by any of the schools assessed, and there were discrepancies across the schools' offerings of courses on animal behavior, ethics, and animal-human interaction. There are recommendations given on how to use comparative psychology concepts to undergraduate and graduate veterinary education.

Summary: Among the natural science subfields of psychology, comparative psychology is the oldest social science. Comparative psychology should be taught in veterinary schools, according to this article, which is the first to propose this idea. Comparative psychology encompasses a variety of inherent connections to veterinary students' education. The study of ethics, animal behavior, research methods, and animal welfare are some of these connections.

Keywords : *Teaching, Veterinary Education, and Comparative Psychology.*

INTRODUCTION

Training veterinary students is one of the biggest issues facing veterinary science. The four-year veterinary program in the United States (U.S.) typically culminates with the student earning a Doctor of Veterinary degree. medication. Anatomy, animal-human interaction, biochemistry, comparative anatomy and physiology, endocrinology, ethics, neurobiology, nutrition, parasitology, pharmacology, and a wide range of other specialty courses are among the many subjects that students study over the course of the four years.

This article's recommendation is for veterinary students to enroll in a comparative psychology course at the undergraduate or graduate level. Among the structured social sciences, comparative psychology (CP) is the oldest; the phrase was initially used in 1778 [1]. The most seasoned behavioral science addressing the core concerns of animal behavior, such as ethics, animal-human interaction, and experimental design, is CP, the oldest of the social sciences [2,3].

The "application of the comparative method to problems in psychology" is the definition of CP [4,5]. It is therefore a generic psychology with techniques and findings that apply to both non-human animals and humans. In fact, one of CP's objectives is to carry out a numerous analogies between non-human animals and humans. Perhaps the only behavioral science that explicitly compares humans and non-human animals is CP, one of the few natural science subfields in psychology. Therefore, we think that a lot of the CP data, methodologies, and principles are a good fit for veterinary education.

To the best of our knowledge, this article is the first to propose that veterinary students would benefit from a connection between veterinary education and a comparative psychology course. Comparative cognition and animal behavior are not the same as CP. Although there may be some similarities between CP and other animal behavior courses or specialties, they are not the same [5]. CP students receive combined instruction on behavioral principles and comparative analytic techniques. The fact that CP courses cover topics like

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animal-human interactions, the application of conditioning techniques, and the function of animals in the therapeutic process is pertinent to veterinary education. These subjects are rarely, if ever, addressed in any other animal behavior course. Furthermore, students in the top CP courses have access to lab experiences that allow them to directly compare the behavior of different animals, including humans.

CP, in our opinion, has a lot to offer veterinary education. First off, CP provides students with a range of viewpoints because it is a general psychology program, many of which are closely tied to veterinary education. These include an emphasis on morality, human-animal interaction, and the application of using professional psychological techniques to treat depression and other behavioral disorders in animals, as well as using animals as a therapeutic adjunct. Additionally, because CP is grounded in psychology, students are taught the more social facets of interacting with other people and handling animals. It has recently been proposed that CP and clinical psychology could benefit from interacting with one another [6]. Perhaps only psychology-based courses place such a strong emphasis on how humans and animals interact with one another.

Second, a course on CP teaches students how to train a range of animals in a range of scenarios using classical and operant conditioning techniques. For example, conditioning techniques are frequently employed not just to boost agricultural animals, as well as to enhance their well-being [7, 8]. Furthermore, some kind of conditioning serves as the foundation for training companion animals. When faced with their clients' behavioral issues, veterinary students are at a clear disadvantage because they have little to no academic and practical expertise with classical and operant training.

Third, the veterinary student will be better able to identify weak and deceptive veterinary research as well as comprehend good research thanks to the study designs utilized in CP. A solid grasp of comparative research techniques will significantly boost the validity of research findings for veterinary students who are interested in conducting studies [2]. Even a basic comprehension of the CP research methodologies will be beneficial to the Students gain a deeper understanding of research, which improves their ability to conduct and consume veterinary science.

For instance, the ethogram, sometimes referred to as a behavioral profile, is one of the most basic research techniques in CP. In certain cases, a human caretaker may report to a veterinarian that their cat "always engages in the problematic conduct. Since there are "behavioral patterns," a veterinarian with experience in CP will recognize this right away. After that, the veterinarian will ask the human caregiver to document everything that happened, including the time, the severity, and the circumstances around the issue behavior. The human customer essentially turns into a citizen scientist [9]. Lem

behavior was demonstrated. The human customer essentially turns into a citizen scientist [9]. Both the human caregiver and the veterinarian are better equipped with such a thorough record to address the behavioral issue. A veterinarian can consult hundreds of ethograms covering every facet of animal behavior by conducting a Google search. Additionally, there are movies that demonstrate how to create an ethogram. For instance, the senior author (CIA) co-created an ethogram to assess elephant enrichment devices [10].

Fourth, the veterinary student will be more equipped to comprehend the social connection between the animal and the human caregiver because CP has a substantial social science component. As previously said, research on animal-human connection is important in CP. No other course in animal behavior or psychology keeps this level of emphasis.

SEARCH METHODOLOGY

We examined the course catalogs of all 32 veterinary colleges in the United States (U.S.) to ascertain whether CP is now taught in these institutions. Since we were unable to get data from non-US veterinary colleges, we limited our search to US institutions. To ascertain whether certain facets of CP are covered, three topics are examined in a normal CP course. These include ethics, animal behavior, and animal welfare. The findings, which are presented below, unequivocally demonstrate that the veterinary school curriculum rarely, if ever, covers these essential CP concepts. Every university's course catalog was seen and assessed; the University of Florida was left out as student login information was needed. An Excel spreadsheet was used to track welfare, ethics, and behavior courses. Course numbers and the course The spreadsheet also included descriptions and information about whether the course was offered as a core or elective.

RESULTS

Below is the information we gathered from our search of veterinary school catalogs. Examining the catalogs took place between November 2022 and January 2023. At the time this item was submitted, we think they were the most recent catalogs. The initial graph illustrates the number of educational institutions that provide animal welfare courses. The number of schools that offer courses in animal behavior is seen in the second graph. The final graph shows how many ethics-related courses veterinary schools provide. Course Information on Animal Welfare: Of the 32 AVMA-accredited veterinary schools that made their course catalogs available, six (19%) mandated that veterinary students complete an animal welfare course, as seen in Figure 1. course on welfare There were just four (12%) colleges that offered a welfare class as an elective, and the other 22 (69%) colleges did not.

Data on Behavior Courses: Figure 2 demonstrates that 12 (37%) of the 32 AVMA-accredited veterinary schools that granted access to course catalogs mandated that veterinarian students complete a behavior course. A behavior course was available at seven (22%) of the colleges as an optional elective, and there are no behavior courses offered at the remaining 13 (41%) universities.

RESOURCES

Providing particular exercises that can be incorporated into a veterinary school curriculum is outside the purview of this research. The International Journal of Comparative Psychology, has a wealth of resources. Along with complimentary access to publications about IJCP and CP recently released two special issues, one on the state of CP (Volume 31) and the other on teaching (Volume 33). These two unique concerns will be especially crucial for educators who wish to add CP components to an already-existing course or create a CP course especially for veterinary students. For programs thinking about formally incorporating CP into their curriculum, these materials can also be used as independent readings and as a starting point for administrative discussions. Twelve papers in the teaching-related special issue summarize more than fifty inquiry-based activities that have been evaluated in classrooms. From tardigrades to humans, a vast range of invertebrates and vertebrates are employed. The exercises cover everything from building ethograms to conducting basic conditioning tests. Papers that explain how to build low-cost robotic animals and devices with 3D printers are especially interesting [11].

The second special issue focuses on the condition of comparative psychology today [12]. Thirteen articles covering a wide range of topics are included in this issue. These subjects include data analysis, equine treatment, comparative methods, and the theory underlying Escholarship.org/uc/item/0mn8n8bc (CP) reached on July 3, 2023. Books, review articles, history, websites, and instructional activities are among the general resources offered by one paper [5].

CP'S ADVANTAGES FOR GRADUATE AND UNDERGRADUATE VETERINARY STUDENTS

Graduate-level CP integration benefits veterinary students in a number of ways. We have already discussed a number of topics, such as the application of conditioning techniques, the study of ethics, and the implementation of research design. Additionally, a psychology course's "social" component will better prepare students to engage with the public and possibly improved self-awareness. Take the use of training techniques to enhance farm animals' life and boost their output as one example. Baldwin [7] and Abramson [13]

demonstrate how farm animals' behavior can be changed through the application of classical and operant conditioning. describes how animals employ operant tactics to control their surroundings. Veterinarians who treat animals with hooves can benefit from functional understanding of conditioning techniques, as can those who work with companion animals that have behavioral issues. Furthermore, by lowering environmental stress, conditioning techniques can be applied to enhance animals' quality of life. The senior author (CIA) trained a llama to stick its head through a "hula hoop" in exchange for food in an unreported experiment. Head prodding was automatically recorded, and a food container was set up to open when certain conditions were met by the llama. The llama then used this technique, which was later modified for horses [14], to indicate to the researcher the meal it liked, to activate and deactivate a fan, and to switch on and off a water spray. The latter two benefits were especially helpful during Oklahoma's scorching summers, when highs of over 100°F (37.8°C) are common. CP is the behavioral science with the most experience in planning and analyzing animal behavior experiments for research-focused veterinary students [2].

Think about the example that follows. The principal writer, a comparative psychologist, (CIA), was invited to work with a group to assess how well dog treats like Greenies™ digest. Instead of testing the substance on a dog, he followed Pavlov's original protocol [15] by putting the product and the digestive secretions in a test tube. The remaining sample could now be weighed as a function of time to easily determine the product's degradation. Since no test animals were utilized, this process removed any potential stress [16].

The ability to parametrically manipulate multiple independent variables, including the quantity of gastric fluids, is an additional benefit of this approach. Since no test animals were utilized, this process removed any potential stress [16]. A study on the use of silver vine (*Actinidia polygama* Maxim) as an enrichment aid for cats [17], the creation of a survey instrument to match a human's personality traits to those of their pets [18], concerns pertaining to equine therapy [19], an examination of reproductive endocrinology and musth in a captive Asian elephant [20], a comparison of food vs. Horses are rewarded with human touch [21], and a study looked into how well horses can tell time [14].

The aforementioned examples center on conventional research topics that veterinarians are familiar with. Nonetheless, a knowledge of CP can be applied in contexts that veterinarians would not typically think about. These include how consumer products impact animal behavior [23] and the connection between CP and lawsuits in the pet sector [22]. We would advise pre-vet majors to enroll in a comparative psychology course at the undergraduate level. Their readiness for graduate training will be greatly improved

by taking this course in addition to those normally needed for a pre-vet major. any CP undergraduate course that is competent.required for a pre-vet major, will greatly improve their graduate training readiness. According to the findings of our survey of veterinary schools, veterinary students receive graduate training in There is inconsistency in the fields of ethics, behavior, and animal welfare. Any competent undergraduate CP course covers these subjects.

LIMITATIONS AND CHALLENGES

This article promotes the inclusion of CP in undergraduate and graduate-level veterinary education. Additionally, we recommend that CP be included in veterinary professional associates' (VPA) education. A much-needed void in veterinary practice is filled by the creation of VPA [24]. Veterinarian politicians tasked with creating VPA programs might think about including a course in psychology in comparison. Finding CP programs can be difficult, even with all of the benefits of CP [3–5]. The fact that relatively few psychology departments at institutions with veterinary schools provide CP courses to their undergraduate students is a significant obstacle. In Due to the login requirement, we did not include the University of Florida in our previous data collection. There was no such limitation on accessing the psychology department's course listing.Comparative psychology courses were given to undergraduate students at seven (21%) of the 33 AVMA-accredited veterinary colleges in the US, and seven (21%) more universities offered an animal behavior course without mentioning comparative psychology in the course title. Undergraduate students at the remaining 19 (58%) universities were not able to take courses in animal behavior or comparative psychology.When graduate degrees in CP are taken into account, the situation may be even worse.None of the 33 veterinary schools in the US with AVMA accreditation provide a program that is exclusively CP. The remaining 25 (76%) colleges do not offer any CP or graduate programs with an animal behavior focus, while eight (24%) universities do. Animal behavior-oriented graduate courses It is not just universities with veterinary schools that lack CP programs. The issue is a national one. Just 82 (12%) of the 650 colleges and universities that were surveyed—including those with veterinary schools—offered an undergraduate course in CP [5]. The fact that there is just one CP program reflects this lack of programs.textbook that is now available [25].

RECOMMENDATIONS AND DISCUSSION

As stated in the Introduction, we think this is the first paper to advocate for the inclusion of comparative psychology in the curriculum of veterinary schools. In order to bolster our claim, we examined volumes 25 (2001) through The Journal

of Veterinary Medical Education, 50 (2023), numbers 1 and 2. Only three of the 1,360 articles—excluding editorials, book reviews, and letters to the editor—fall within the general category of CP [26–28].Notwithstanding the drawbacks and difficulties, we think that include CP in the curriculum of veterinary schools will be advantageous for both CP and the instruction of veterinary students.

Considering the dearth of graduate schools and courses in comparative psychology, we recommend that Those who are considering adding CP:1. Develop courses in close collaboration with a comparative psychologist. Division 6 (Society for Behavioral Neuroscience and Comparative Psychology) of the American Psychological Association (APA) keeps a list of comparative psychologists, and the International Society for Comparative Psychology runs a Listserv Additionally, the APA has a consulting firm for education made up of professionals with expertise in creating and assessing educational materials 2. Create an online CP course for veterinary students. 3. Commission a CP textbook especially for veterinary students. 4. Include CP courses in the undergraduate pre-vet program 5. Give veterinary students who don't have access to CP programs CP texts. 6. Employ comparative psychologists as advisors or instructors; and 7. Create a rigorous one-week "mini-course" in comparative psychology. We think that the situation is comparable in other regions of the world, even if the information and concepts covered in this study are based on American institutions. Numerous articles supporting CP have been published in Asia [31] and Africa [29, 30]. Colleagues in these regions of the world can benefit from these studies and the current contribution by learning more about CP and being encouraged to include it in their nations' veterinary education.

CONCLUSIONS

It would appear that comparative psychology and veterinary training would go hand in hand. Both have expressed an interest in behavior, animal welfare, and the moral treatment of animals. Additionally, both are interested in human-animal interactions and behavioral strategies. Through the establishment of acceptable incentive circumstances and the creation of production-friendly surroundings, behavioral approaches are utilized to address problematic behaviors and boost farm animal output. Additionally, the CP research designs are among the oldest that are currently in use, which aids veterinary students in better experiment planning and identifying high-quality behavioral science.It won't be simple to incorporate CP into veterinary school curricula. There aren't many veterinary schools with psychology departments that offer CP courses. Additionally, there aren't many graduate programs. We have offered a number of recommendations, including independent readings,CP textbook development

and online course creation for veterinary students.

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Conflicts of Interest

The authors declare no conflict of interest.

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