Comparative Psychology: Integrative Methods Bridging Human and Non-Human Research Across Psychological Subfields

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Dr. Nora McLean, a professor of psychology at Lake Forest College, began her Undergraduate studies specializing in biology, specifically in the field of animal research. Upon entering graduate school, she noticed that her research leaned more towards psychology, namely using animal models to investigate human behavior. While pursuing her graduate studies, Dr. McLean joined a lab that focused on comparative methodologies, which prioritized the incorporation of research involving both human and non-human subjects. This experience played a crucial role in developing her comprehension of the significance of employing comparative methodologies when addressing complex research questions.

During her teaching career, Dr. McLean observed that psychology students commonly enroll in courses including cognitive, developmental, and social psychology. These courses offer a comprehensive and in-depth investigation of research that includes both human and non-human participants. However, she noticed a critical gap: there were no methods courses specifically designed to integrate this research. A thorough comprehension of psychology and neuroscience necessitates the inclusion of comparative research, which builds upon studies involving non-human animals to guide both experimental and clinical study. Knowing the vital importance of comparative research in the field of psychology, Dr. McLean saw the necessity for a course that specifically targets this research gap. Therefore, she designed the course Comparative Psychology.

Course Objective

Comparative psychology aims to examine and compare the psychological behavior, biology, and cognition of nonhuman animals and humans, emphasizing both differences and similarities across species. The aim of this course is to define comparative psychology and investigate Tinbergen's four essential levels of analysis. It discusses mechanisms - how behaviors are produced by physiological and neurological processes, adaptive function - why behaviors exist in terms of evolutionary benefits, ontogeny - how behaviors develop over an individual's lifetime, and phylogeny - how behaviors evolved across species. The comparative psychology course focuses on developing research proposals that use appropriate methodologies and technologies to study psychological phenomena as well as analyzing differences in behavior across individuals, groups, and species. Observational skills are taught and used to assess how well empirical studies address these levels of analysis.

Teaching Strategy

Students will conduct field research with limited control over sampling techniques. Along with an evaluation of ethical and scientific research conducted in laboratory settings, students will also reflect on the external and internal validity of these studies. Students will have the opportunity to observe field sites through video footage, gain proficiency in coding non-human behavior, and make informed decisions about selecting a suitable sampling strategy. The responses will be recorded in a spreadsheet for quantification purposes. The class develop individual projects titled "Scientific Questions Communication" where each student chooses a preferred organism within the realm of psychological subfields. They will locate an empirical article pertaining to this organism and create a scientific summary, which will be converted into a scientific media article that aims to present the information in an engaging and accessible way. The article should clearly communicate the scientific findings and address key areas including theory, fundamental concepts, animal cognition, and mating behavior. Through this project, students are encouraged to design and implement creative activities that engage the class in understanding non-human behavior.

A Bridge from Traditional Psychology Courses

While this course is related to animal behavior, it provides a distinct perspective by emphasizing ethical considerations and behavioral analysis beyond biological processes. It investigates animal behavior from an animal-centered viewpoint, beginning with a history of animal behavior from both psychological and biological perspectives. The course investigates how these two domains interact with one another and how they relate to current topics such as behavior and artificial intelligence.

Future Direction

Dr. McLean believes that after completing this course, students will approach future courses with a more in-depth understanding of their chosen organism models while also critically reflecting on methodology and empirical data in a scientifically rigorous way. She hopes that students continue to learn and understand the importance of nonhuman research and its applications.