1. Vilček, Š., and P.F. Nettleton. “Pestiviruses in Wild Animals.” Veterinary Microbiology, vol. 116, no. 1-3, Aug. 2006, pp. 1–12, https://doi.org/10.1016/j.vetmic.2006.06.003. Accessed 7 Nov. 2019.

Hypothesis

[Pestiviruses](https://www.sciencedirect.com/topics/immunology-and-microbiology/bovine-viral-diarrhea-virus-1) are not strictly host-species specific and can infect not only domestic but also wild animals.

Control

Genetic typing of early pestivirus isolates from wild species revealed that the majority were BVDV-1. Of the pestiviruses identified so far three species (CSFV, BVDV-1, giraffe pestivirus) and three genotypes (BDV-2, BDV-4, pronghorn) appear to circulate in wildlife animal populations.

Independent variables

Virus has been isolated from some of these animal species, but since BVDV can contaminate cell cultures and [foetal calf serum](https://www.sciencedirect.com/topics/immunology-and-microbiology/fetal-calf-serum" \o "Learn more about foetal calf serum from ScienceDirect's AI-generated Topic Pages), early reports of BVDV isolation have to be considered with caution.

Dependent variables

There are five pestivirus species recognised so far: CSFV, BVDV-1, BVDV-2, BDV and giraffe pestivirus. In addition new genotypes were recognised by phylogenetic analysis of pestivirus nucleotide sequences: BDV-1 (true BDV), BDV-2, BDV-3, BDV-4 and a pronghorn pestivirus genotype (Fig. 1). Recently a pestivirus isolated from a bovine cell culture originating from Brazil (Ho\_Bi strain) was phylogenetically typed (Schirrmeier et al., 2004) and may represent a new pestivirus genotype

My thoughts, there could be confounding in this study. Because each virus can have different consequences on different countries and study does not excessively explain each location’s reactions to the study. Therefore, I think there could be confounding. Spreading these kinds of viruses to different areas can surely have different consequences and it was not elaborated clearly in this study.

I think borrowing ideas from other disciplines or areas could have given better results.

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1. Gomez Villa, Alexander, et al. “Towards Automatic Wild Animal Monitoring: Identification of Animal Species in Camera-Trap Images Using Very Deep Convolutional Neural Networks.” Ecological Informatics, vol. 41, Sept. 2017, pp. 24–32, https://doi.org/10.1016/j.ecoinf.2017.07.004. Accessed 29 July 2019.

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Hypothesis: The hypothesis in the mentioned article might be related to the effectiveness of using Very Deep Convolutional Neural Networks (CNNs) for automatic wild animal monitoring, specifically for the identification of animal species in camera-trap images. It would likely propose that employing CNNs can achieve accurate and efficient species identification compared to traditional methods.

Control: The control in this context would likely refer to any baseline or standard comparison method used for species identification in camera-trap images. The researchers might compare the performance of the CNN-based approach against existing methods or traditional manual identification to assess its superiority.

Independent Variables: The primary independent variable in this study would be the use of Very Deep Convolutional Neural Networks for species identification. Researchers might also consider other variables, such as the selection of specific CNN architectures or parameters.

Dependent Variables: The dependent variable would be the accuracy or effectiveness of species identification achieved by the Very Deep Convolutional Neural Networks. This would likely be measured by metrics such as precision, recall, F1-score, or accuracy rates when identifying different animal species from the camera-trap images.

1. Comizzoli, Pierre, et al. “Interactions between Reproductive Biology and Microbiomes in Wild Animal Species.” Animal Microbiome, vol. 3, no. 1, Dec. 2021, https://doi.org/10.1186/s42523-021-00156-7. Accessed 1 Mar. 2022.

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The paper does not explicitly state a hypothesis, but rather aims to review and identify the interactions between animals' reproductive biology and their microbiomes, with an emphasis on wild species. The objective is to identify important research gaps and areas for further studies in this emerging and critical component of wild animal conservation.

In the context of the paper, control refers to the measures taken to reduce contamination bias in sampling and sequencing reproductive microbiomes. This includes taking numerous negative control samples throughout sampling and laboratory procedures to identify potential contaminants post-sequencing, using standardized 16S protocols, and using positive mock bacterial community controls to verify the distribution of communities and to verify that spurious sequences are not being generated during molecular procedures in preparing libraries for sequencing. These measures help to improve the credibility of reproductive microbiomes and ensure that the results are valid.

In the context of the paper, the independent variables are the various factors that can influence the structure and function of microbiomes in wild animal species. These include endogenous processes related to host physiology and behavior, such as reproductive signaling, copulation, pregnancy, and offspring development, as well as environmental variations. The paper aims to identify the interactions between these independent variables and the microbiomes of wild animal species, with a focus on reproductive biology.

In the context of the paper, the independent variables are the various factors that can influence the structure and function of microbiomes in wild animal species. These include endogenous processes related to host physiology and behavior, such as reproductive signaling, copulation, pregnancy, and offspring development, as well as environmental variations. The paper aims to identify the interactions between these independent variables and the microbiomes of wild animal species, with a focus on reproductive biology.

1. Pesciaroli, M., et al. “Tuberculosis in Domestic Animal Species.” Research in Veterinary Science, vol. 97, 1 Oct. 2014, pp. S78–S85, www.sciencedirect.com/science/article/abs/pii/S0034528814001623, https://doi.org/10.1016/j.rvsc.2014.05.015. Accessed 11 May 2020.

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The paper does not explicitly state a hypothesis. However, the objective of the paper is to provide an updated overview of the susceptibility and role in transmission of tuberculosis in various domesticated animal species, as well as diagnostic approaches for detecting the infection in each species.

The paper discusses the importance of control and eradication measures for tuberculosis in domestic animal species, particularly in cattle. The implementation of control and eradication campaigns in cattle has led to a reduction in the prevalence of pig tuberculosis in many countries. However, the increasing spread of outdoor pig farming systems has led to the reemergence of M. bovis infection in pigs in non-OTF countries. The paper suggests that to minimize the spread of TB among animals on the same farm, consideration should be given to segregation of cattle from other ungulates where possible, active ante-mortem TB surveillance programs in goat flocks, and active and accurate post mortem TB surveillance at the slaughterhouse. In non-OTF countries, surveillance of TB in goats is important, and goats used for raw milk production living in mixed cattle-goat herds must be tested for TB.

The paper does not explicitly state any independent variables as it is a review article that provides an overview of the susceptibility and role in transmission of tuberculosis in various domesticated animal species, as well as diagnostic approaches for detecting the infection in each species. Therefore, there are no variables being manipulated or controlled in this paper.

The paper does not explicitly state any dependent variables as it is a review article that provides an overview of the susceptibility and role in transmission of tuberculosis in various domesticated animal species, as well as diagnostic approaches for detecting the infection in each species. Therefore, there are no variables being measured or observed in this paper.

1. Cilulko, Justyna, et al. “Infrared Thermal Imaging in Studies of Wild Animals.” European Journal of Wildlife Research, vol. 59, no. 1, 30 Dec. 2012, pp. 17–23, <https://doi.org/10.1007/s10344-012-0688-1>.

The paper does not explicitly mention a hypothesis. However, it discusses the use of infrared thermography in various studies of wild animals, including detecting infectious diseases, controlling reproductive processes, analyzing thermoregulation, and determining the size of wildlife populations. The paper provides examples of successful applications of thermal imaging in these studies.

‌ The paper does not explicitly mention any independent variables as it is a review article discussing the use of infrared thermography in studies of wild animals. However, in the studies cited in the paper, independent variables may include factors such as environmental conditions, disease status, reproductive status, and species-specific traits.

The dependent variables in the studies cited in the paper may include various physiological and behavioral parameters of the animals being studied, such as body surface temperature, thermoregulatory mechanisms, reproductive behavior, and disease progression. However, it is important to note that the paper is a review article discussing the use of infrared thermography in studies of wild animals and does not present any original research with specific dependent variables.

To assess the internal validity of a research study, one needs to critically evaluate the study's design, methodology, and data analysis to determine if the study's results accurately reflect the relationship between the variables being investigated. Issues with internal validity can arise when there are flaws in the study's design or procedures that could lead to erroneous conclusions or the misinterpretation of results.