

The Misuse of Anthropomorphism in Comparative Psychology

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Introduction

This paper examines two major assumptions that guide Dwyer and Burgess' interpretation of rat causal learning research. These assumptions arise from the traditional methodological commitments in animal psychology that Cameron Buckner calls "Standard Practice." Specifically, they assume that animal psychologists should follow Morgan's Canon and favor lower, associative explanations whenever possible, and that the primary rationale for doing so is to avoid an alleged fallacy of anthropomorphism. Using these assumptions as a starting point, I present objections grounded in the work of Fitzpatrick, Keeley, Papineau and Heyes, and Blaisdell. I argue that Morgan's Canon should not be used as a methodological criterion, that avoiding anthropomorphism does not justify its application, and that the existing evidence strongly supports the possibility that rats engage in causal inference.

Dwyer and Burgess on Associative Explanations and Simplicity

Dwyer and Burgess argue that "available evidence does not licence the conclusion that non human animals display evidence of human like cognitive processes in these areas," including causal reasoning, sensitivity to the absence of stimuli, and the relationship between effort and reward. They claim that recent research suggests animals might, in addition to simpler associative processes, also have richer ways of representing the texture of their environment than previously supposed, but still ask whether simpler mechanisms can be ruled out as accounts of these behaviours and whether Morgan's Canon has been satisfied. They believe the simpler associative explanations have not yet been ruled out.

They rely on Morgan's Canon as a justification for preferring lower level associative processes whenever possible. They frame causal model theory as requiring higher order mental processes, and thus argue that unless associative mechanisms can be ruled out, higher explanations should not be accepted. Their methodological position is that accounts of animal behaviour in terms of higher order cognitive functions should only be accepted when explanations in terms of simpler mechanisms are unavailable.

Objections to Favoring Lower Explanations

Agnosticism and the Problem of Using Morgan's Canon as a Tiebreaker

Fitzpatrick notes that Custance and others concede that they have no empirical reason to prefer one explanation to another, and Morgan's Canon is then invoked as the tiebreaker, used to decide in favour of the lower explanation even though the data fails to distinguish it from the rival higher explanation. This reliance on the Canon is unjustified, since the simplicity of an explanation is no necessary criterion of its truth. Even if associative explanations were simpler, there are many different forms of simplicity. There is no reason for Morgan's Canon to always trump the rest in every circumstance.

Evolutionary Constraints and the Misuse of Simplicity

Fitzpatrick also argues that several biological considerations complicate theoretical conservatism. Evolvability constraints, phylogenetic constraints, brute facts of physiology, and fitness considerations all shape what cognitive processes are plausible in a species. In many cases, these considerations can provide grounds for attributing more sophisticated cognitive processes rather than fewer. If an animal occupies an ecological niche that meets the conditions for the evolution of a sophisticated cognitive process, we should be more inclined towards generosity in attribution. If its close relatives possess the process, we might reasonably attribute it as well. Thus, the Canon cannot serve as a universal rule.

Anthropomorphism and Why Morgan's Canon Cannot Justify Its Avoidance

The Clever Hans Case Does Not Support the Canon

One assumption behind Dwyer and Burgess' use of Morgan's Canon is the idea that it protects against anthropomorphism. But the Clever Hans case had nothing to do with ascribing human like abilities to a non human animal. Its issue was the reliance on anecdotal evidence instead of controlled experiments, and Morgan's Canon, as it existed prior to this, did not prevent it from occurring. Avoiding anthropomorphism does not justify methodological conservatism.

Replacing One Bias with Another

Without sufficient independent justification, an inclination to accept cognitively unsophisticated explanations of animal behaviour that are not sufficiently well supported by the data is just as much an error as crude anthropomorphism. Rejecting one bias should not lead to institutionalizing another. Keeley argues that traits shared between humans and non humans are not inherently anthropomorphic; instead, they should be understood as mammalomorphic or primatomorphic. There is no special reason to avoid anthropomorphism other than simply avoiding false claims.

Limiting Research Advancement

Fitzpatrick argues that unless one is prepared to speculate far beyond the current data and entertain hypotheses involving more sophisticated cognitive processes, it is unlikely that one will uncover subtle and surprising capacities such as the dance language. The Scaling Up Strategy, which demands always starting with the least cognitively sophisticated explanation, would have prevented important discoveries. Morgan's Canon therefore acts as an impediment to research rather than a safeguard.

Evaluating Dwyer and Burgess' Interpretation of Blaisdell

Dwyer and Burgess discuss Blaisdell's study, which investigated whether rats could differentiate between observing an effect and generating it through intervention. Blaisdell found that rats made correct inferences for instrumental actions on the basis of purely

observational learning and correctly differentiated between common cause models, causal chains, and direct causal links. The results contradict the view that causal learning in rats is solely driven by associative learning mechanisms and are consistent with causal Bayes net theories, showing that the core competency of reasoning with causal models seems to be in place in animals even without elaborate physical knowledge.

Dwyer and Burgess argue that a reciprocal relationship between lever pressing and food magazine responding could account for the observed pattern, and that they were unable to replicate the theoretically vital interaction from the original study. They conclude that response competition might contribute to observed behaviour, though they know of no existing experiment where this possibility can be directly tested. However, the existence of response competition does not directly invalidate the claim that rats might be capable of causal reasoning. Differences in replication could also contribute to their findings. Moreover, the fact that there could be another explanation does not mean Blaisdell is not correct in his conclusion based on the data.

Dwyer and Burgess conclude that none of the evidence supports the claim that rats display higher order rational processes. But if one defines rational processes as the capacity to derive predictions for interventions after purely observational learning, this is a core competency not reducible to associative learning. Their conclusion is tied to using human cognition as the standard, which presents a fallacy. Causal inference in rats need not be human like to qualify as causal inference.

Conclusion: Do Rats Display Causal Inference?

Given the objections to both assumptions underlying Dwyer and Burgess' argument, the evidence does provide good reasons to think that rats are capable of causal inference. Alternative processes could explain the behaviour, but the evidence shows that causal inference is a strong, well supported possibility. The issues lie with Morgan's Canon. It should not be used as a criterion for evaluating evidence, nor should it override empirical findings. When the burden of proof is applied asymmetrically, as Morgan's Canon requires, it produces methodological bias rather than clarity. A neutral evidentialism that evaluates higher and lower explanations equally is the appropriate methodological approach. Under such an approach, the Blaisdell study provides compelling support that rats are capable of causal inference.

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