**Discussion**

**Intrinsic Factors:**

Discuss the effects of intrinsic factors such as sex, maturity, satiation, and body mass on sentinel behavior.

Males sentineled more. More energy to be invested in sentinel behaviour, but also sentinel behaviour could be used for other reasons

Territory guarding

Keeping tabs on group members and the presence of other groups

Heavier and satiated individuals sentineled more. Again, consistent with Bedneckoff’s model, could be due to having more energy to sentinel. Unfed individuals in experiments decreased their sentinel contribution (compensation).

Mention experiments and how difficult they are to conduct (especially body mass)

Explain Bedneckoff’s model again

More mature, older individuals sentineled more than younger individuals.

More experience with threats, younger individuals might not know what is or isn’t threatening, making them less effective sentinels

Older individual could be teaching younger individuals about threats by sentineling and making alarm calls when threats are present.

Older individuals could also be heavier and forage more effectively, making sentinel behaviour in young individuals unfit

Interpret the observed trends and their implications for understanding sentinel behavior.

Intrinsic factors appear mostly related to energetic reserves and the ability to perform sentinel behaviour without incurring risks of starvation.

Also introduces sentinel behaviour as not only an antipredatory strategy, but also serves other purposes to \*some\* individuals.

**Extrinsic Factors:**

Analyze the effects of extrinsic factors such as dominance, group size, and risk on sentinel behavior.

More dominant individuals sentineled more than subordinates, Possibly more energy to sentinel or ability to forage more effectively (bullying others, receiving gifts, etc).

Also ties into other purposes for sentinel behaviour that would serve dominant individuals more

Sex / Dominance interaction also supports this hypothesis, with dominant males sentineling more. Could be that dominant males need to keep track of other groups and group members.

Could be explained through Bedneckoff’s model again

Group size led to a decrease in individual sentinel behaviour, but greater sentinel behaviour at the group level.

More individuals capable of sentineling, therefore shorter and less frequent bouts for all individuals.

Safety in numbers, more individuals capable of being vigilant.

Risk increased sentinel behaviour

Makes sense, more need for vigilance = more sentinel behaviour

This can be either the presence of young or the presence of predator

Sentinel more when other group rivals were sensed, fitting with the hypothesis that sentinel behaviour serves other purposes other than antipredator vigilance.

Discuss how social dynamics and environmental factors influence sentinel decision-making.

Group size and dominance, the two social factors, appear to still be in relation to energetic levels. Dominance can be argued to also have the added motivation of information gathering and territory defense.

Risk can be explained through Bedneckoff’s model as a selfish decision to maintain personal safety first, rather than an altruistic behaviour that primarily benefits other individuals.

Outgroup rivals falls into this as it is a selfish decision to be sentinel after being exposed to stimuli from outgroup rivals, especially dominant individuals.

Risk to all individuals. Assumptions of Bedneckoff’s model state that between sentinel and foraging without a sentinel, sentinel is safer.

**Coordination in Sentinel Behavior:**

Evaluate the presence of coordination as a characteristic element of sentinel behavior in the studies analyzed.

Discuss any trends or changes observed over time regarding the inclusion of coordination in defining sentinel behavior.

**Exploration of Urbanization Effects:**

Why urbanization but not climate change or invasive species.

Explore the potential effects of urbanization on sentinel behavior using the factors identified in the review.

Examine the various factors associated with urban environments that may influence sentinel behavior, such as habitat alteration, noise pollution, and human presence.

**Identification of Research Gaps:**

Identify gaps and areas of uncertainty within the existing literature on urbanization and sentinel behavior.

Very few articles empirically testing the effects of satiation and body mass on sentinel behaviour

Very likely due to how difficult it is to train animals to stand on a scale, for example.

Few articles on the various effects of urbanization on sentinel behaviours.

Completely different environment, different factors involved.

An extensive research endeavour would be required to effectively parse through the effects of urbanization on sentinel behaviour

Few species used in experiments, could use different species to see if there are great deviations caused by species type.

Do different species have a different sentinel system?

**Implications and Future Directions:**

Discuss the implications of the findings for understanding animal behavior and ecology.

More research is beneficial to truly discern the underlying mechanisms behind sentinel behaviour and social behaviours as a whole

Would help us better understand how these behaviours evolved, and how they might continue to change

Identify potential avenues for future research based on the gaps and limitations identified.

Effects of urbanization on sentinel behaviour could be an interesting avenue for research

Urbanization on the rise and more species are in greater proximity to humans.

Many behavioural adaptations observed, but less so known about complex social behaviours like sentinel behaviour

Could help us understand if sentinel behaviour is beneficial for urban species.

Highlight the importance of considering both intrinsic and extrinsic factors in studying sentinel behavior.

**Conclusion:**

Summarize the key findings and insights gained from the study.

Reiterate the significance of the research and its contribution to the field of animal behavior.

Conclude with a brief statement about the broader implications of the findings.