RESEARCH ARTICLE

Journal of Animal Ecology | BRITISH ECOLOGICAL SOCIETY

Inter-group relationships influence territorial defence in mountain gorillas

Robin E. Morrison[1,2] | Jean Paul Hirwa[1] | Jean Pierre S. Mucyo[1] | Tara S. Stoinski[1,3] | Veronica Vecellio[1] | Winnie Eckardt[1]

Abstract

Abstract

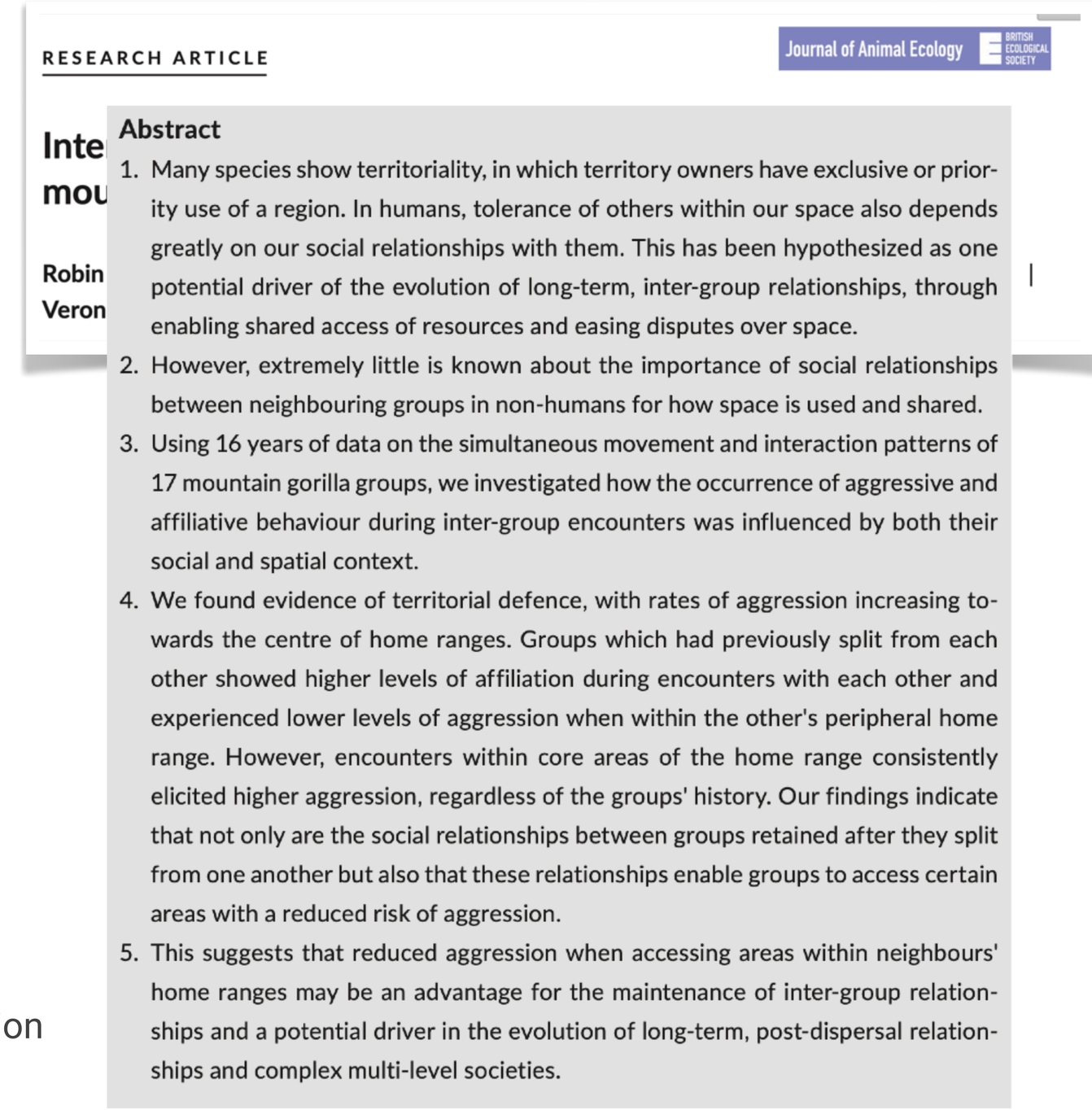
1. Many species show territoriality, in which territory owners have exclusive or priority use of a region. In humans, tolerance of others within our space also depends greatly on our social relationships with them. This has been hypothesized as one potential driver of the evolution of long-term, inter-group relationships, through enabling shared access of resources and easing disputes over space.
2. However, extremely little is known about the importance of social relationships between neighbouring groups in non-humans for how space is used and shared.
3. Using 16 years of data on the simultaneous movement and interaction patterns of 17 mountain gorilla groups, we investigated how the occurrence of aggressive and affiliative behaviour during inter-group encounters was influenced by both their social and spatial context.
4. We found evidence of territorial defence, with rates of aggression increasing towards the centre of home ranges. Groups which had previously split from each other showed higher levels of affiliation during encounters with each other and experienced lower levels of aggression when within the other's peripheral home range. However, encounters within core areas of the home range consistently elicited higher aggression, regardless of the groups' history. Our findings indicate that not only are the social relationships between groups retained after they split from one another but also that these relationships enable groups to access certain areas with a reduced risk of aggression.
5. This suggests that reduced aggression when accessing areas within neighbours' home ranges may be an advantage for the maintenance of inter-group relationships and a potential driver in the evolution of long-term, post-dispersal relationships and complex multi-level societies.

- Stand-alone summary/overview
- 200-300 words
- Components:
  - 1. Background, known
  - 2. Gap, unknown, problem
  - 3. Research aim / hypothesis
  - 4. Quick summary of approach / methods
  - 5. Key results, important numbers
  - 6. Conclusion / answer the question
  - 7. Broader implication/speculation/recommendation

Alison M. Ashbury, 2022-05-30

Abstract

- Stand-alone summary/overview
- 200-300 words
- Components:
  - 1. Background, known
  - 2. Gap, unknown, problem
  - 3. Research aim / hypothesis
  - 4. Quick summary of approach / methods
  - 5. Key results, important numbers
  - 6. Conclusion / answer the question
  - 7. Broader implication/speculation/recommendation



RESEARCH ARTICLE

Journal of Animal Ecology — British Ecological Society

Inte
mou

Robin
Veron

Abstract

1. Many species show territoriality, in which territory owners have exclusive or priority use of a region. In humans, tolerance of others within our space also depends greatly on our social relationships with them. This has been hypothesized as one potential driver of the evolution of long-term, inter-group relationships, through enabling shared access of resources and easing disputes over space.
2. However, extremely little is known about the importance of social relationships between neighbouring groups in non-humans for how space is used and shared.
3. Using 16 years of data on the simultaneous movement and interaction patterns of 17 mountain gorilla groups, we investigated how the occurrence of aggressive and affiliative behaviour during inter-group encounters was influenced by both their social and spatial context.
4. We found evidence of territorial defence, with rates of aggression increasing towards the centre of home ranges. Groups which had previously split from each other showed higher levels of affiliation during encounters with each other and experienced lower levels of aggression when within the other's peripheral home range. However, encounters within core areas of the home range consistently elicited higher aggression, regardless of the groups' history. Our findings indicate that not only are the social relationships between groups retained after they split from one another but also that these relationships enable groups to access certain areas with a reduced risk of aggression.
5. This suggests that reduced aggression when accessing areas within neighbours' home ranges may be an advantage for the maintenance of inter-group relationships and a potential driver in the evolution of long-term, post-dispersal relationships and complex multi-level societies.

Abstract

- Stand-alone summary/overview
- 200-300 words
- Components:
  - 1. Background, known
  - 2. Gap, unknown, problem
  - 3. Research aim / hypothesis
  - 4. Quick summary of approach / methods
  - 5. Key results, important numbers
  - 6. Conclusion / answer the question
  - 7. Broader implication/speculation/recommendation

Abstract

1. Many species show territoriality, in which territory owners have exclusive or priority use of a region. In humans, tolerance of others within our space also depends greatly on our social relationships with them. This has been hypothesized as one potential driver of the evolution of long-term, inter-group relationships, through enabling shared access of resources and easing disputes over space.
2. However, extremely little is known about the importance of social relationships between neighbouring groups in non-humans for how space is used and shared.
3. Using 16 years of data on the simultaneous movement and interaction patterns of 17 mountain gorilla groups, we investigated how the occurrence of aggressive and affiliative behaviour during inter-group encounters was influenced by both their social and spatial context.
4. We found evidence of territorial defence, with rates of aggression increasing towards the centre of home ranges. Groups which had previously split from each other showed higher levels of affiliation during encounters with each other and experienced lower levels of aggression when within the other's peripheral home range. However, encounters within core areas of the home range consistently elicited higher aggression, regardless of the groups' history. Our findings indicate that not only are the social relationships between groups retained after they split from one another but also that these relationships enable groups to access certain areas with a reduced risk of aggression.
5. This suggests that reduced aggression when accessing areas within neighbours' home ranges may be an advantage for the maintenance of inter-group relationships and a potential driver in the evolution of long-term, post-dispersal relationships and complex multi-level societies.