

# Human-macaque interactions: interface dynamics and attitudes to feeding at Angkor Wat, Cambodia

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## Context

The long-tailed macaque (*Macaca fascicularis*) is known for its behavioural and dietary flexibility (Gumert, 2011). The species is often found in human landscapes, yet co-existence between macaques and humans presents challenges, such as disease transmission and human-directed macaque aggression (Fuentes, 2006; Mallapur, 2013). This research investigated human perceptions of macaques and human-macaque interactions over 8 weeks (June-July 2018). Human-macaque interactions are frequent at the study site and often involve feeding or opportunistic snatching of visitors' food, which can lead to aggression and biting.



Figure 1: Macaque foraging in waste bin at the study site: author's own photograph

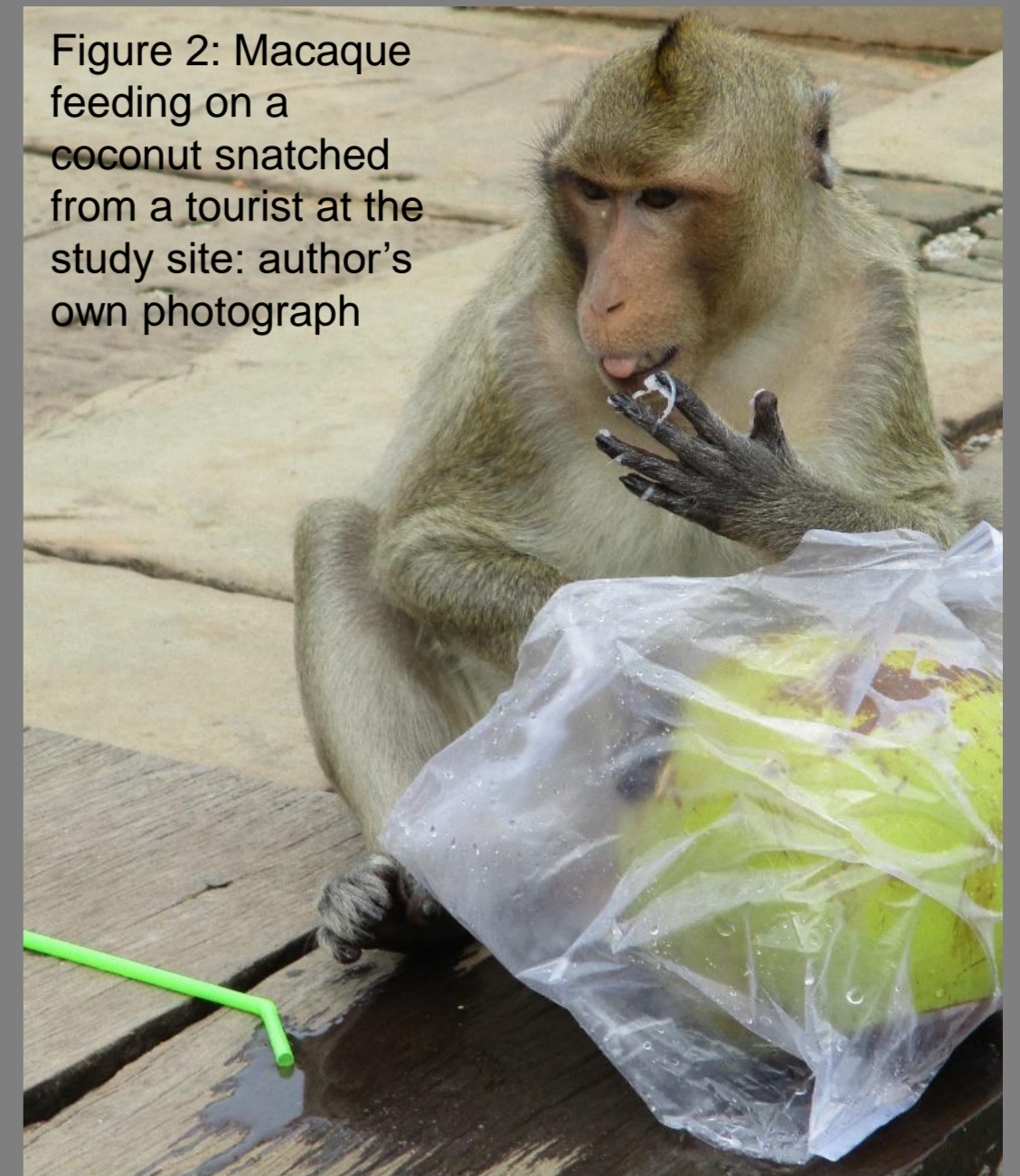


Figure 2: Macaque feeding on a coconut snatched from a tourist at the study site: author's own photograph

## Methods

A mixed methods approach was used to combine in-depth analysis with rigorous, statistical verification (Newing, 2011).

Quantitative study: Observation of human-macaque interactions (n=80). Incidences of affiliative, aggressive and opportunistic behaviour towards humans were recorded to determine the impact of human food on these behaviours. Interaction initiator, tourist density/ proximity, human behaviour were also recorded. Data analysis: SPSS ver. 25

Qualitative study: Semi-structured interviews (n=41). Tourists from 10 countries and local people were interviewed to examine attitudes and perceptions of the macaques and views on feeding them. Data analysis: NVIVO 12

## Recommendations

- Raise awareness of potential health risks of food sharing through improved signage and information panels
- Tourist guides and temple staff should be trained and briefed in how to manage visitors who wish to feed the macaques
- A review of food waste receptacles in the park is needed
- The complete banning of provisioning could be considered. However, this may not be effective and alternative means to gain karmic merit for Buddhist visitors need to be explored
- Tourists should be warned about carrying plastic bags as the macaques have learned that plastic bags carry food

## Main Research Aims

- To identify the role played by the presence of human food in human-macaque interactions
- To examine whether cultural factors influenced attitudes to the macaques
- To present a set of recommendations that could mitigate negative effects of human-macaque interactions

## Results

- Researcher observation reported a high incidence of foraging from waste bins with potential for aggressive encounters (Figure 1)
- Opportunistic behaviour often involved snatching food (Figure 2). Displays of aggression were commonly seen when humans tried to retrieve objects
- Frequencies of opportunistic and affiliative behaviours were higher when human food was involved (Figure 3). A chi-square test to determine overall association between presence of human food and macaque behaviours showed statistical significance:  $p < .05$ .  $\chi^2$ : 8.427;  $n = 80$ ;  $df = 3$ ;  $p = .038$

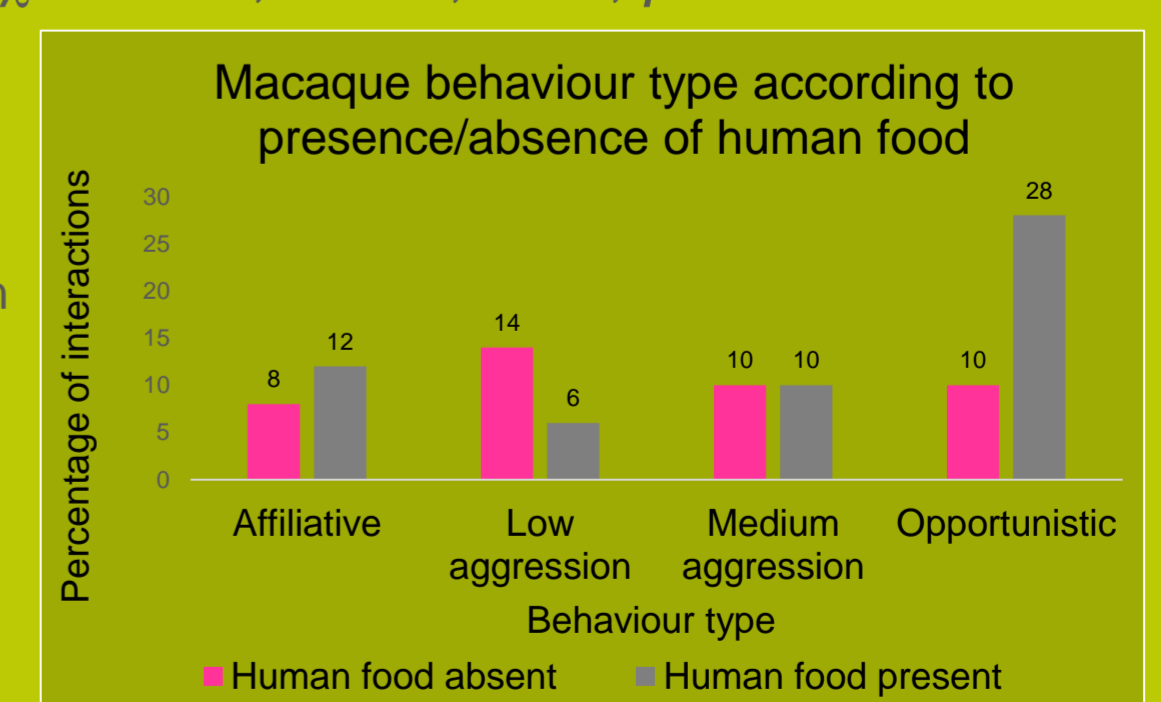


Figure 3: results showing the impact of the presence of human food on macaque behaviour: author's own image

- Cultural factors appeared to have a considerable influence on attitudes to feeding the macaques, with a high proportion of Cambodian respondents stating that sharing food with the monkeys was following Buddhist teachings
- International visitors regarded the macaques as wild animals that should not be fed, as this would affect natural behaviour

## References

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