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 研究課題名(和文) Third-Party Social Evaluations

 研究課題名(英文) Third-Party Social Evaluations

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研究成果の概要(和文)：ヒト以外の動物が他者間のやり取りを観察し、他者にどのような社会的評価を下すのかを調べた。イヌは飼主の協力要請を拒んだ人から餌を受け取るのを回避した。相互的な人と、非相互的な人の物体交換を観察した後では、フサオマキザル、リスザル共に、非相互的な人を回避した。リスザルだけは、相互的な人を好んだ。待てば待つほど多くの餌を得ることができる場面では、フサオマキザルは非相互的な人が餌を提示した時、長く待たずに餌を取った。また、フサオマキザルは、異種に餌を与える人よりも自種に餌を与える人を好んだ。本研究の結果は、多くの種が多様なプロセスで他者に対して社会的評価を下しているかもしれないことを示唆している

研究成果の概要(英文)：The purpose of this project was to see how other species socially evaluate individuals based on the latter's interactions with third parties. We showed that dogs that see somebody refuse to help their owner solve a task, avoid taking food from the non-helper. We have also shown that two species of monkeys - squirrel monkeys and capuchins, show a bias against third parties who fail to reciprocate. Unlike capuchins, however, squirrel monkeys also showed a positive preference for reciprocating third-party exchangers. Interestingly, after witnessing a non-reciprocal exchange, capuchins are less likely to wait for pieces of food from a non-reciprocator (delay of gratification), but they prefer humans who give food to their own species rather than another species. Our results suggest that social evaluations in different species may reflect different mechanisms.

研究分野：Psychology

キーワード：Comparative cognition Social cognition Nonhuman primates

1. 研究開始当初の背景

To what extent and in what circumstances do other species engage in social evaluation, or “image-scoring” based on third-party interactions? We aimed to build upon procedures previously developed by us to study social evaluations in multiple species using methods that will be as similar as possible. In what ways does the nature of the interaction between the third parties (either pro-social or anti-social), influence (a) the subject’s visual attention toward the actors and (b) willingness to socially engage with them? The project aimed to address these questions inspired by studies by Anderson, Takimoto, Kuroshima, and Fujita (2013) and by Anderson, Kuroshima, Takimoto, and Fujita (2013), which showed the feasibility of testing third-party social evaluation in nonhuman species using non-verbal, live social interactions. In one previous study, individuals of a New World monkey species, capuchin monkeys, watched as one human actor tried in vain to solve a problem (how to open a container). The actor then requested help from another actor, who either behaved pro-socially, by co-manipulating the container in a way that facilitated the original actor solving the problem, or who refused to help, leaving the original actor to continue to fail. Other variants of these situations controlled for differential manipulation of the container, and the attentiveness of the second actor. After these scenarios were acted out, when they were allowed to accept a gift of food from one of the two actors, the monkeys showed a significant reluctance to take

food from the anti-social (non-helpful) actor. Further experiments ruled out possible explanations that did not involve an evaluation of willingness or unwillingness to help. This was the first demonstration of human third-party social evaluation in nonhuman primates.

In a second study, capuchins watched while two actors engaged in an exchange of small objects in either a reciprocal way (e.g., each actor donates 1 or 3 objects and then receives either 1 or 3 objects in return), or in a non-reciprocal way (e.g., actor donates 1 object, receives 3, or donates 3 objects, receives 0). In this situation, when the two actors subsequently offered identical food to the monkeys, there was again strong evidence of a bias against the actor who had behaved non-reciprocally (i.e., a “selfish” actor). By contrast, the monkeys showed a preference for accepting food from an actor who had performed a generous exchange with a third party, namely donating more objects than she received. In other words, capuchin monkeys show flexible social evaluation of third parties based on the anti-social or pro-social nature of the interactions.

2. 研究の目的

The purpose of the research was to better understand the comparative development of evaluation of pro-social behaviors and their violations between third parties. The overall aim was to obtain a more comprehensive evolutionary perspective on social evaluation processes in mammals. Building upon procedures developed by the applicant in collaboration with colleagues at Kyoto University (Anderson et al. 2013a,

b), the project developed third-party scenarios for the study of social evaluations in multiple species using methods that were highly comparable across species.

3 . 研究の方法

Our subjects watched interactions between two third parties (humans), and then expressed their preference for or bias against one of the two individuals in free-choice phases. The independent variable was the nature of the interaction for each third party (either pro-social or anti-social); the dependent variables were visual attention and willingness to socially engage with them.

4 . 研究成果

We have obtained further evidence for third-party-based social evaluations in capuchin monkeys, as well as in squirrel monkeys. But we believe the process in squirrel monkeys to be fundamentally different from that in capuchin monkeys. Whereas capuchin monkeys are more likely to reject food offered by a non-reciprocator, they do not show any bias following a reciprocal exchange. By contrast, not only do squirrel monkeys also avoid accepting food from a non-reciprocator, they also show a preference for an individual who reciprocates with a third party after receiving items from that party. This divergence led us to speculate that the squirrel monkeys respond according to a simple rule such as “take food from the last individual who donated to the other.” This is in contrast to what we believe goes

on during social evaluations by capuchin monkeys, which is a form of affective bookkeeping, with a negative evaluation of the non-reciprocator building up with repeated experience of seeing the asymmetrical exchanges. Further research will aim to test this hypothesis about differential mechanisms.

We have also found evidence of third-party based social evaluation in dogs, specifically in a situation in which dogs observed their owner struggling to open a container, and requesting help from a bystander who either helped or did not help. The bystander and a third, neutral person then both offered food to the dog. Results showed, as in our original study with capuchin monkeys, that dogs were less likely to take food from a nonhelpful person. One question that remains to be addressed is whether it is important to include the owner in such a situation (we presume that the owner increases the amount of attention that the dog pays to the interaction). We are currently extending the research with dogs to look at social evaluation in another kind of context, namely the reciprocal vs. non-reciprocal exchange procedure previously used with monkeys. At present we have tested about 50% of the dogs required for adequate statistical analysis. In the event of no significant result, the procedure will be repeated, but this time again involving the dogs' owners in the exchange phase, as this proved a successful adaptation in the “helper” study described above. Finally, we have looked at “ingroup vs. outgroup” bias in squirrel and capuchin

monkeys, in which the ingroup is a member of the same species and the outgroup is represented by a monkey of the other species. Our results show that after observing a human actor giving food to a conspecific and another actor giving food to a member of another species, capuchins but not squirrel monkeys show a preference for the “own species” actor. However, there is no discrimination between the actors when each behaves negatively, by removing food that is potentially accessible to the monkeys. These findings are likely to stimulate further research on third-party-based species identity.

References

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5. 主な発表論文等

(研究代表者、研究分担者及び連携研究者には下線)

[雑誌論文](計 2 件)

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〔図書〕(計 0 件)

〔産業財産権〕
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〔その他〕
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