

■ Tekst 7

Economist.com **SCIENCE & TECHNOLOGY**

Animal behaviour

Fair and square

EVERYBODY loves a fat pay rise. Yet pleasure at your own can vanish if you learn that a colleague has been given a bigger one. Indeed, if he has a reputation for slacking, you might even be outraged. Such behaviour is regarded as "all too human", with the underlying assumption that other animals would not be capable of this finely developed sense of 28. But a study by Sarah Brosnan and Frans de Waal of Emory University in Atlanta, Georgia, which has just been published in *Nature*, suggests that it is all too monkey, as well.

The researchers studied the behaviour of female brown capuchin monkeys, which have all the necessary ingredients to capture the public imagination. They look cute. They are good-natured, co-operative creatures, and they share their food readily. 29, like their female human counterparts, they tend to pay much closer attention to the value of "goods and services" than males (although why this is so remains a mystery).

Such characteristics make them perfect candidates for Dr Brosnan's and Dr de Waal's study. The researchers spent two years teaching their monkeys to exchange tokens for food. Normally, the monkeys were happy enough to swap pieces of rock for slices of cucumber. However, when two monkeys were placed in separate but adjoining chambers, so that each could observe what the other was getting in return for its rock, their behaviour became markedly different.

In the world of capuchins, grapes are luxury goods (and much preferable to cucumbers). So when one monkey was handed a grape in exchange for her token, the second was 30 to hand hers over for a mere piece of cucumber. And if one received a grape without having to provide her token in exchange at all, the other tossed her own token at the researcher or out of the chamber. Indeed, the mere presence of a grape in the other chamber (in the absence of an actual monkey able to eat it) was enough to arouse 31 behaviour in a female capuchin.

Dr Brosnan and Dr de Waal report that such behaviour is unusual in their trained monkeys. During two years prior to these experiments, failure to exchange tokens for food occurred in fewer than 5% of trials. And what made the behaviour even more 32 was that these monkeys forfeited food that they could see – and which they would have readily accepted in almost any other set of circumstances.

The researchers suggest that capuchin monkeys, like humans, are guided by 33. In the wild, they are a co-operative, group-living species. Such co-operation is likely to be stable only when each animal feels it is not being cheated. Refusing a lesser reward signals feelings of indignation to other members of the group.

So it seems that such feelings are not the preserve of 34 alone. However, whether such a sense of fairness evolved independently in capuchins and humans, or whether it stems from the common ancestor that the species had 35m years ago, is, as yet, an unanswered question.

The Economist

■ Tekst 7 Fair and square

Kies bij iedere open plek in de tekst het juiste antwoord uit de gegeven mogelijkheden.

1p **28** ■

- A duty
- B fairness
- C guilt
- D humour

1p **29** ■

- A As a result
- B For instance
- C In short
- D Moreover

1p **30** ■

- A determined
- B eager
- C unwilling

1p **31** ■

- A co-operative
- B imitative
- C rebellious

1p **32** ■

- A extraordinary
- B predictable
- C tragic
- D troublesome

1p **33** ■

- A feelings of compassion
- B social emotions
- C territorial instincts
- D the need for food

1p **34** ■

- A female capuchins
- B laboratory animals
- C monkeys
- D people