



In the last decade, extended altruism towards unrelated group members has been proposed to be a unique characteristic of human societies. Experimental studies on captive chimpanzees have shown, on the other hand, that they are limited in the ways they share or cooperate with others. Individuals are indifferent to the welfare of unrelated group members; they do not care about fairness, and so on (see my previous posts [here](#) and [here](#)). The behaviour of chimpanzees in the wild is quite selfish, even when some cooperation is involved. For instance, they build coalitions, but that's to climb the social ladder, or they give meat, but only so that they can get sex.

In the last issue of [PLoS](#), however, [Boesch](#), Bolé, Eckhardt and Boesch report 18 cases of adoption, a highly costly behavior, of orphaned youngsters by group members in Tai forest chimpanzees. Half of the orphans were adopted by males and remarkably only one of these proved to be the father. Such adoptions by adults can last for years and thus imply extensive care towards the orphans. These observations suggest that, under the appropriate socio-ecological conditions, chimpanzees do care for the welfare of unrelated group members.

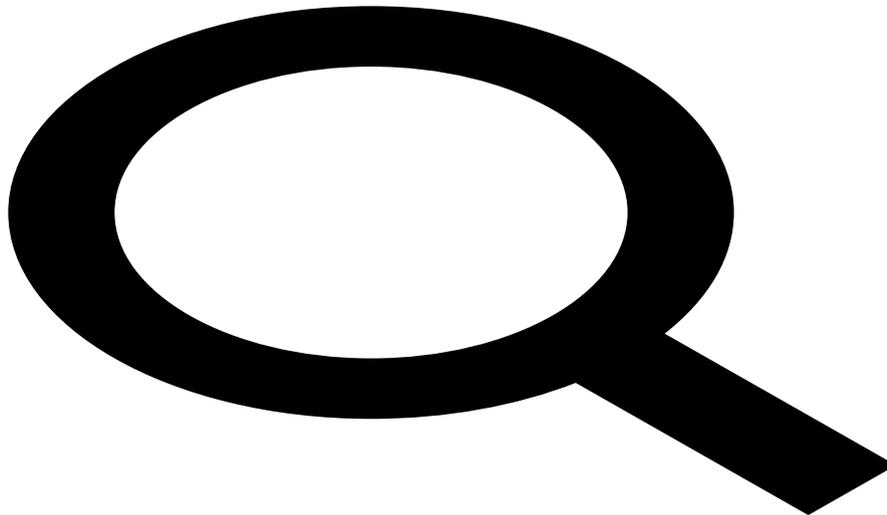
Why are these chimpanzees so altruistic?

In their paper, Boesch et al. suggest several evolutionary explanations, for instance:

- 1) Reciprocity "One potential long-term benefit of adoption by adult males is that once an orphan becomes an adult, 10 years later, he could become an ally of the aging male".
- 2) Group augmentation: "The high level of adoption observed in Tai chimpanzees compared to other well-studied East African populations might result from the fact that the Tai population coexists with a large population of leopards and the resulting high predation pressure exerted by these cats seems to have promoted strong within-group solidarity in the form of care for all injured individuals as well as joint coalition defense against the leopards". (Such an explanation is not based on group selection. It is rather a [mutualistic](#) theory since it is in the direct interest of group members to help other group members. Indeed, more children mean bigger groups.)

I would like to suggest an alternative explanation based on the distinction between the proper domain and the actual domain of evolved cognitive abilities. Here, Boesch et al. assume that these adoptions are adaptive. But it could be the case that they are rather an accidental by-product of chimpanzee cognition. Indeed, chimpanzees are probably equipped with an evolved 'parental instinct' or 'care-giver module' that leads them to care about their children. This module has been designed by natural selection to detect the individual's offspring. However, this module maybe mistaken and can lead individuals to sometimes care about children who are not their offspring. Take another example. We have evolved a capacity to be aroused by persons from the other sex in order to reproduce ourselves. Although this module is adaptive, it sometimes misfires and is activated by many things that do not lead to reproduction ([Sport Illustrated](#)'s photos being one of

them). In other word, when we try to explain a behaviour from an evolutionary point of view, we should be careful not to mix the proper domain of a module - all the information that it is the module's biological function to process (for instance: the sexual trait of individuals) and the actual domain - everything that the mechanism actually does, which differs from but overlaps with what it was designed to do (Playboy's photos). Typically, cultural items tap onto the actual domain to get our attention and be reproduced (see the proper and the actual domain of the face recognition module in Sperber and Hirschfeld in [The cognitive foundations of cultural stability and diversity](#))*.



Returning to the case of chimpanzee adoptions, it could be the case that chimpanzees are not really altruistic. They might have evolved a module to take care about everything that is "cute" and "in despair". This module sometimes lead them to adopt orphans not because doing so is adaptive but only because these orphans meet the input condition of their module (exactly like the playmate, albeit a photo, meets the input conditions of males' modules). Note that something similar may be happening among humans as well. When people adopt orphans from foreign countries, there is absolutely no evolutionary value in such an action. The explanation of their behaviour might rather be cognitive and only indirectly evolutionary. Evolution has selected a parental instinct that leads people to want to care for children who would have a unique need of them, which is first and foremost true of their own children, but also of abandoned or orphaned children in need.

This explanation fits with what we know about chimpanzees' lack of mutual help (by contrast, it is surprising that chimpanzees help orphans but let their conspecifics die when they are adults). It also fits with primates' drive for babies and children. Indeed, in primates' societies, individuals are always keen to handle babies and children (there is even a [market](#) for handling babies and the scarcer the babies, the longer individuals groom the mother to get the authorization to handle it - see also Sarah Hrdy's book Mothers and others reviewed [here](#)). Here again, it would be possible to draw an evolutionary theory (female use others' babies to train themselves, etc.) but it seems simpler to consider that this caring for young primate is not an adaptation, but the by-product of an evolved disposition to take care of one's offspring.



* Note that it is one of the non scientific reasons why in films aliens cannot be too unhuman: If they looked like starfish, people would have much more difficulties empathizing or fantasizing!

Left: inside the actual domain of the face recognition module (among others....)

Right: outside the actual domain of the face recognition module