

我們與動物之間的距離



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人間高尚的行為



- ❧ 雪中送炭
- ❧ 不獨親其親，不獨子其子
- ❧ 急公好義
- ❧ 燃燒自己，照亮別人（奉獻青春，扶養弟妹）

雪中送炭



- ❧ Vampire bats regularly regurgitate blood and donate it to other members of their group who have failed to feed that night, ensuring they do not starve.



不獨親其親、子其子



☞ In numerous bird species, a breeding pair receives help in raising its young from other ‘helper’ birds, who protect the nest from predators and help to feed the fledglings.



急公好義



- ❧ Vervet monkeys give alarm calls to warn fellow monkeys of the presence of predators, even though in doing so they attract attention to themselves, increasing their personal chance of being attacked.



犧牲奉獻



❧ In social insect colonies (ants, wasps, bees and termites), sterile workers devote their whole lives to caring for the queen, constructing and protecting the nest, foraging for food, and tending the larvae.



動物的利他行為



- ❧ **Altruistic behavior** is common throughout the animal kingdom, particularly in species with complex social structures.
- ❧ 問題： 何謂利他行為？ 動物怎麼會做出利他行為？

利他行為的定義



- ❧ In evolutionary biology, an organism is said to behave altruistically when its behavior benefits other organisms, at a cost to itself.
- ❧ The costs and benefits are measured in terms of *reproductive fitness*, or expected number of offspring.
- ❧ So by behaving altruistically, an organism reduces the number of offspring it is likely to produce itself, but boosts the number that other organisms are likely to produce.
- ❧ 問題：生物學上的利他行為與日常生活中我們所說的利他行為有何差別？

差別



- ❧ In everyday parlance, an action would only be called 'altruistic' if it was done with the **conscious intention** of helping another. But in the biological sense there is no such requirement.
- ❧ Indeed, some of the most interesting examples of biological altruism are found among creatures that are (presumably) not capable of conscious thought at all, e.g. insects.
- ❧ For the biologist, it is the consequences of an action for reproductive fitness that determine whether the action counts as altruistic, not the intentions, if any, with which the action is performed.

Social instincts (不求回報的利他行為)



❧ “Capt. Stansbury found on a salt lake in Utah an old and completely blind pelican (鵜鶘；塘鵝), which was very fat, and must have been long and well fed by his companions. Mr. Byth, as he informs me, saw Indian crows feeding two or three of their companions which were blind.”



Social instincts (不求回報的利他行為)



- ❧ “Brehm encountered in Abyssinia a great troop of baboons (狒狒) which were crossing a valley: some had already ascended the opposite mountain, and some were still in the valley; the latter were attacked by the dogs, but the old males immediately hurried down from the rocks, and with mouths widely opened, roared so fearfully, that the dogs quickly drew back.
- ❧ **阿比西尼亞帝國是1270年到1974年期間，非洲東部的一個國家，是今日東非國家衣索比亞的前身。

Social instincts (不求回報的利他行為)



- ❧ They were again encouraged to the attack; but by this time all the baboons had reascended the heights, excepting a young one, about six months old, who, loudly calling for aid, climbed on a block of rock, and was surrounded.
- ❧ Now one of the largest males, a true hero, came down again from the mountain, slowly went to the young one, coaxed him, and triumphantly led him away — the dogs being too much astonished to make an attack.”

Psychological Altruism



- ❧ Altruism might be defined simply as action that is motivated by the desire to help others. However, we may also use the word in a somewhat stronger sense, as involving *the willingness to forgo some good for oneself* in order to help others.
- ❧ Understood in this stronger way, altruism is often taken to be the paradigmatic moral trait. But is altruism, in this sense, exclusively a human characteristic? Or do other animals also possess this quality?

Altruism in Rhesus Monkeys (恒河猴；普通獼猴)



- ❧ A series of experiments conducted at the Northwestern University Medical School and reported in the psychological journals for 1964: these experiments were designed to discover whether rhesus monkeys are altruistic, and the method was to see whether they would be deterred from operating a device for securing food if doing so would cause pain to another monkey.





- ❧ One animal (called by the experimenters the “operator” or “O”) was placed in one side of a divided box and taught to obtain food by pulling either of two chains. Food was available only when a light signal was given (a different light for each chain), and the O was trained to show no special preference for either chain.



- ❧ Another monkey (called the “stimulus animal” or “SA”) was put into the other side of the box, which was divided by a one-way mirror so that the O could see the SA but not the other way around.
- ❧ The floor on the SA’s side was covered with a grid attached to a shock source.
- ❧ Three days were allowed for the O to adapt to the presence of the SA, and then a circuit was completed so that whenever the O pulled one of the chains to secure food the SA received a severe electrical shock.
- ❧ Pulling the other chain continued to give food, but produced no shock.





Now, by turning on one signal light at a time, in various sequences and at various intervals, the experimenters could determine the extent to which the perception of the SA's distress would influence the O's willingness to pull the shock-producing chain.



- ❧ After numerous trials the experimenters concluded that “a majority of rhesus monkeys will consistently suffer hunger rather than secure food at the expense of electroshock to a conspecific”.
- ❧ In particular, in one series of tests, 6 of 8 animals showed this type of sacrificial behavior; in a second series, 6 of 10; and in a third, 13 of 15. One of the monkeys refrained from pulling either chain for 12 days, and another for 5 days, after witnessing shock to the SA — which means they had no food at all during that time.
- ❧ These experiments seem to show the rhesus monkeys are altruistic in the strong sense — that they will sacrifice their own good for the sake of others.

動保員與農場主人



給集中營總司令的信

✎ 二次大戰期間，德國一家化學公司I. G. Farben寫給奧茲比茨集中營總司令的信件片斷：



訂貨

- ❧ “In contemplation of experiments with a new soporific drug, we would appreciate your procuring for us a number of women....We received your answer but consider the price of 200 marks a woman excessive. We propose to pay not more than 170 marks a head. If agreeable, we will take possession of the women. We need approximately 150.”
- ❧ After the women were received by I.G. Farben and the experiments accomplished, a second letter was sent by the chemical company: “Received the order of 150 women. Despite their emaciated condition, they were found satisfactory....The tests were made. All subjects died. We shall contact you shortly on the subject of a new load.”

牽人散步



對待動物的適當態度是？

