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Ancestor-Descendant Conflict

Kerstin Stucky and Andy Gardner
School of Biology, University of St Andrews, St Andrews, UK

Definition

Ancestor-descendant conflict is the idea that ancestors may be favoured to manipulate their descendants—by means of transmission of cultural traditions—to behave altruistically with each other to an extent that goes beyond the descendants' own inclusive-fitness interests.

Introduction

Religious behaviours involving the veneration of ancestors (see entry on "ancestor cults") have been suggested to be a universal phenomenon of human cultures (Steadman et al., 1996). Indeed, ancestor worship, that is, "the communicated acceptance of the claim that dead ancestors influence and/or are influenced by their living descendants" (Clark & Coe, 2021, p. 281), has been found to be fundamental to the social cohesion of societies and has been documented in various past and present cultures (e.g. see Couderc and Sillander (2012), for an overview), for example, in the prehistoric Andes (Hastorf, 2003; Lau, 2021; Mantha, 2009), in ancient Rome (Balz et al., 2007), present-day Borneo (Clark, 2021; Sillander, 2012), and throughout Chinese history and present society (Balz et al., 2007; Hu & Tian, 2018; Tavor, 2023). Notably, such practices often involve costly commitments from worshippers, such as participation in energetically costly and time-consuming rituals and the adherence to self-constraining taboos as well as norms demanding sacrifices and other altruistic behaviours (Clark, 2021; Tavor, 2023), that is, behaviours that benefit others at a cost to self (West et al., 2011).

Ancestor-Descendant Conflict

Why the practice of ancestor worship seems to feature so prominently in the history—and in some cases the present—of human societies might be explained by what has been termed "ancestor-descendant conflict" (Coe et al., 2010). Ancestor-descendant conflict describes the diverging fitness interests between living individuals and their potentially long-dead ancestors and can be viewed as an extension of "parent-offspring conflict" (Trivers, 1974; see Box 1). This concept, which has been devised by Coe et al. (2010) and has been applied uniquely to humans, can be understood by the integration of two key concepts of human evolution: inclusive fitness theory (Hamilton, 1964) and cultural transmission (Boyd & Richerson, 1985).

Inclusive fitness theory states that a social behaviour, that is, one that "has fitness

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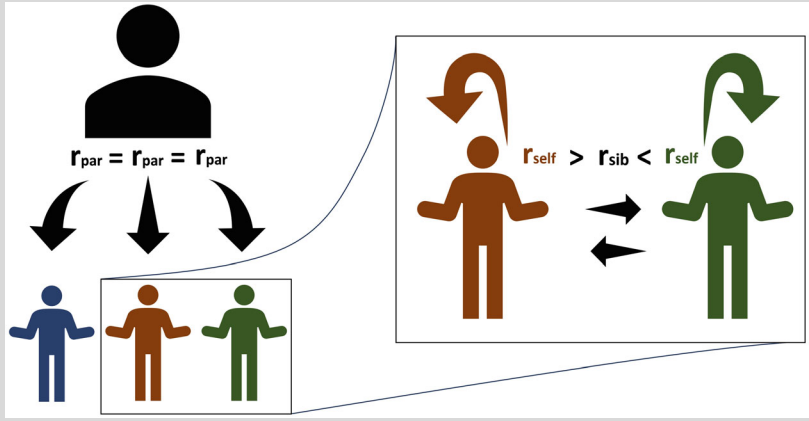
Box 1 Parent-Offspring Conflict

In a standard outbreeding, diploid setting, parents are equally related to all their offspring, and hence they are typically selected to make an equal investment of their resources into each of their offspring. Each offspring, however, is more related to itself than to its siblings—all the more so in nonmonogamous mating systems—and is therefore selected to solicit relatively more parental investment for itself at the cost of its siblings receiving reduced investments.



These diverging fitness interests of parents and offspring, and the resulting behaviours employed by each individual in an attempt to realise its preferred outcome, have been termed "parent-offspring conflict." As a consequence, "parents are expected to attempt to mold an offspring, against its better interests" (Trivers, 1974, p. 249).

consequences for both the individual that performs that behaviour (the actor) and another individual (the recipient)" (West et al., 2007, p. 418), will be favoured by natural selection when the direct fitness effects for the actor ($-c$) and the indirect fitness effects for the recipient (b), the latter being weighted by the genetic similarity between the interacting individuals (r), are net positive (i.e. $-c + br > 0$, termed "Hamilton's rule" by Charnov (1977) after Hamilton (1964)). Altruistic behaviours as occurring in the context of ancestor worship can therefore evolve when the direct fitness costs for the actor are sufficiently small, the indirect fitness benefits for the recipient are sufficiently large, and when recipient and actor are sufficiently closely related.

Kin recognition, among other mechanisms, can lead to the positive assortment of genetically similar individuals, ensuring that the actor and the recipient within a social interaction are related to each other (West et al., 2011). Humans can recognise even very distantly related, and even unfamiliar, kin via the use of cultural markers of affiliation such as common descent names (Coe & Palmer, 2013; Palmer et al., 2016; Palmer & Steadman, 1997). Such markers are recurrent products of a complex symbolic communication system which has evolved owing to unique cultural learning mechanisms. These mechanisms allow for the accumulation of extrasomatically stored, adaptive information via transgenerational transmission (Boyd & Richerson, 1985; Hill et al., 2009), such as in human traditions (Coe & Palmer, 2008).

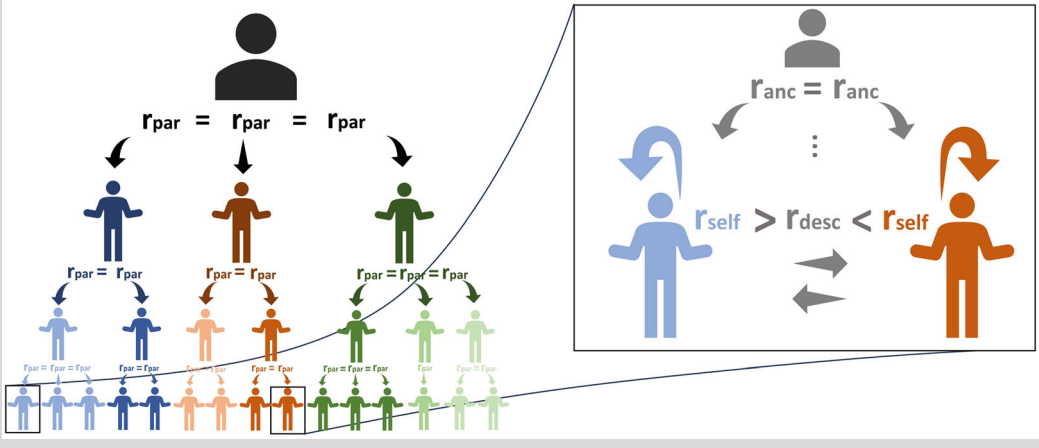
As demonstrated by the concept of parent-offspring conflict (Box 1), differences in the relatedness valuations that individuals place on their social partners can result in conflict even among very close kin. Just as a parent—who values all its offspring equally—may come into conflict with

an offspring, who values itself more than it does its siblings, over how parental resources are to be distributed among siblings so too may a more distantly related ancestor and descendant come into conflict over how the descendant should behave towards others descending from the same ancestor (Coe et al., 2010; Coe & Palmer, 2013; Palmer et al., 2015; Palmer & Coe, 2020; see Box 2). Accordingly, analogous to the expectation that parents would attempt to manipulate their offspring into being more altruistic towards their siblings than would be in the individual offspring's inclusive fitness interests in the context of parent-offspring conflict, the "ancestor manipulation explanation of altruism" (Palmer et al., 2015) states that ancestors should attempt to manipulate their descendants into being more altruistic towards codescendants than would be in the individual descendant's inclusive fitness interest in the context of ancestor-descendant conflict.

In particular, it has been suggested that by exploiting cultural learning mechanisms, ancestors might have been able to establish traditions of kin recognition and perceived relatedness in order to maximise their inclusive fitness, potentially within the framework of religious systems involving ancestor worship (Coe et al., 2010; Coe & Palmer, 2013; Palmer et al., 2015, 2016; Palmer & Coe, 2020). More specifically, by teaching their children to recognise and value codescendants as they value themselves in their interactions with them, and to in turn pass these teachings on to their own children, ancestors might have succeeded in encouraging relatively more cooperative behaviour among their descendants and, consequently, increased their "descendant-leaving success" (Palmer & Steadman, 1997). Coe and

Box 2 Ancestor-Descendant Conflict

By analogy with parent-offspring conflict, ancestors are suggested to favour a greater degree of altruism among their codescendants than the codescendants would prefer to enact, on account of each codescendant being, on average, of equal relatedness value to the ancestor but each being more related to themselves than they are to each other.



These diverging inclusive fitness interests of ancestors and descendants, and the resulting behaviours employed by each individual in an attempt to realise its preferred outcome, have been termed "ancestor-descendant conflict." As a consequence, ancestors are expected to manipulate their descendants to act against their better interests.

colleagues (Coe et al., 2010; Coe & Palmer, 2013; Palmer et al., 2015; Palmer & Coe, 2020) further propose that the multigenerational outcome of ancestor-descendant conflict is expected to represent a compromise between the inclusive fitness interests of the ancestor and their codescendants, with the success rate of parental manipulation potentially varying in different societies.

Conflict Resolution

Mathematical modelling motived by Coe et al.'s (2010) idea of ancestor-descendant conflict supports the notion that cultural traditions encouraging increased altruism among distant co-descendants—albeit giving rise to said conflict—could have been favoured by natural selection under a range of demographic scenarios and with varying success rates of parental/ancestral manipulation (Stucky & Gardner, 2024). Although descendants suffer an inclusive fitness cost by being manipulated by the cultural tradition into increased altruistic behaviour towards codescendants, information on their kin relations provided along with the tradition allows them to direct their altruism towards relatives, thereby generating inclusive fitness benefits that would otherwise not be obtained.

Specifically in populations with low average relatedness among social partners, for example, consisting of large communities, and with high rates of dispersal, ancestors could potentially have achieved a greater degree of behavioural manipulation and therefore greater altruistic behaviour among distantly related codescendants. This is due to the relatively lower probability to interact with relatives in such populations, whereas in populations with high average relatedness, for example, consisting of smaller communities and with low rates of dispersal, the probability to interact with a relative is relatively high. Here, being able to recognise kin is therefore less advantageous compared to behaving indiscriminately altruistic. In such populations with relatively low average relatedness, however, "both ancestors and descendants would be able to maximize their inclusive fitness, providing a resolution to the proposed ancestor-descendant conflict" (Stucky & Gardner, 2024, p. 240). Thus, traditions of ancestor worship as the outcome of ancestor-descendant conflict could have evolved and spread due to their function as "descendant-leaving strategies" (Palmer & Steadman, 1997), potentially influencing the consequent gene-culture coevolution of traits implicated in religious and cooperative behaviour in humans.

Cross-References

- ▶ Ancestor Cults
- ▶ Ancestors
- ▶ Ancestors: Worship
- ▶ Beliefs and Kin-Biased Cultural Transmission
- ▶ Cultural Transmission
- ▶ Kin Altruism
- ▶ Kin Selection
- ▶ Religious Moral Traditions

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