

## Kin Selection

### **Definition**

Otherwise known as inclusive fitness theory, kin selection refers to the theory that people have evolved to favor others who are genetically related to them. The logic of the theory is that a gene can propagate itself through two routes. The first is by increasing the likelihood that body in which it resides (the self) will survive and reproduce (e.g., by leading to the selection of nutritious foods and fertile mates). The second is by increasing the reproduction of close relatives (kin) who also possess copies of the same gene (e.g., by leading the self to help kin in ways that increase the chances that they will reproduce and the gene will be passed on). Some of your kin are more closely related to you than others and therefore are more likely to carry your genes. Thus, because you share 50% of your genes with your siblings but only 12.5% with your cousins, you should be much more likely to help siblings than cousins. According to the theory of inclusive fitness, parental care for offspring is a special case of kin selection, as it is yet another case of people (or animals) providing care for closely related kin who carry shared genetic material.

### **History and Modern Usage**

The theory of kin selection is widely regarded as the most important theoretical development in evolutionary thinking since Darwin, as it proposes a mechanism that explains why individuals would altruistically help others (that is, why they would provide resources to someone else at a cost to themselves). The idea of altruism seems counter-intuitive from a Darwinian perspective, as any behavior that increases the likelihood that another individual will survive or reproduce at a cost to one's own survival or reproduction should be selected against. But if this altruistic behavior enhances the survival or reproduction of a related individual to a greater degree than it

diminishes one's own chances, then the theory proposes that such behavior would be selected for. To give a concrete example, I may be willing to endanger myself by alerting my siblings when there is a predator afoot, even if my own shouting makes the predator more likely to see me. Although this behavior puts me at risk, it has the potential to result in greater replication of the genes that I carry than if I kept quiet and one or more of my siblings were killed.

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See also: Reciprocal Altruism

Further readings: Although William D. Hamilton originated the theory of inclusive fitness, his articles are highly mathematical and complex. For this reason, secondary sources are usually more suitable for those interested in further reading. The following are excellent sources.

Daly, M., Salmon, C., & Wilson, M. (1997). Kinship: The conceptual hole in psychological studies of social cognition and close relationships. In J. Simpson & D. T. Kenrick (Eds). *Evolutionary social psychology*. (pp. 265-296). Mahwah, N.J.: Lawrence Erlbaum.

Buss, D. M. (2004). *Evolutionary psychology: The new science of the mind*. 2<sup>nd</sup> Edition. Boston: Allyn & Bacon. (An wide-ranging volume, of which chapter 8 is concerned with inclusive fitness)