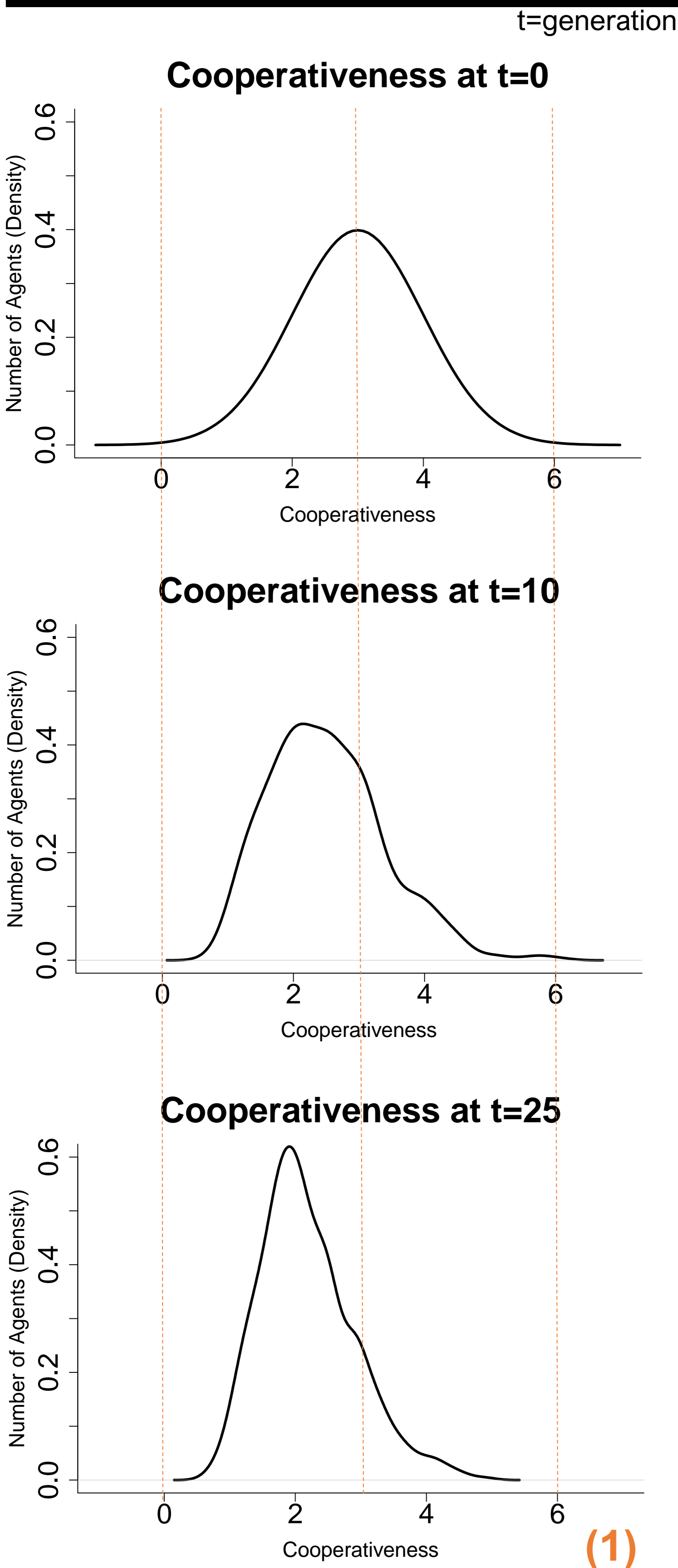


Punishment Cannot Explain Human Cooperation, But a Generative Understanding of Moral Values Can

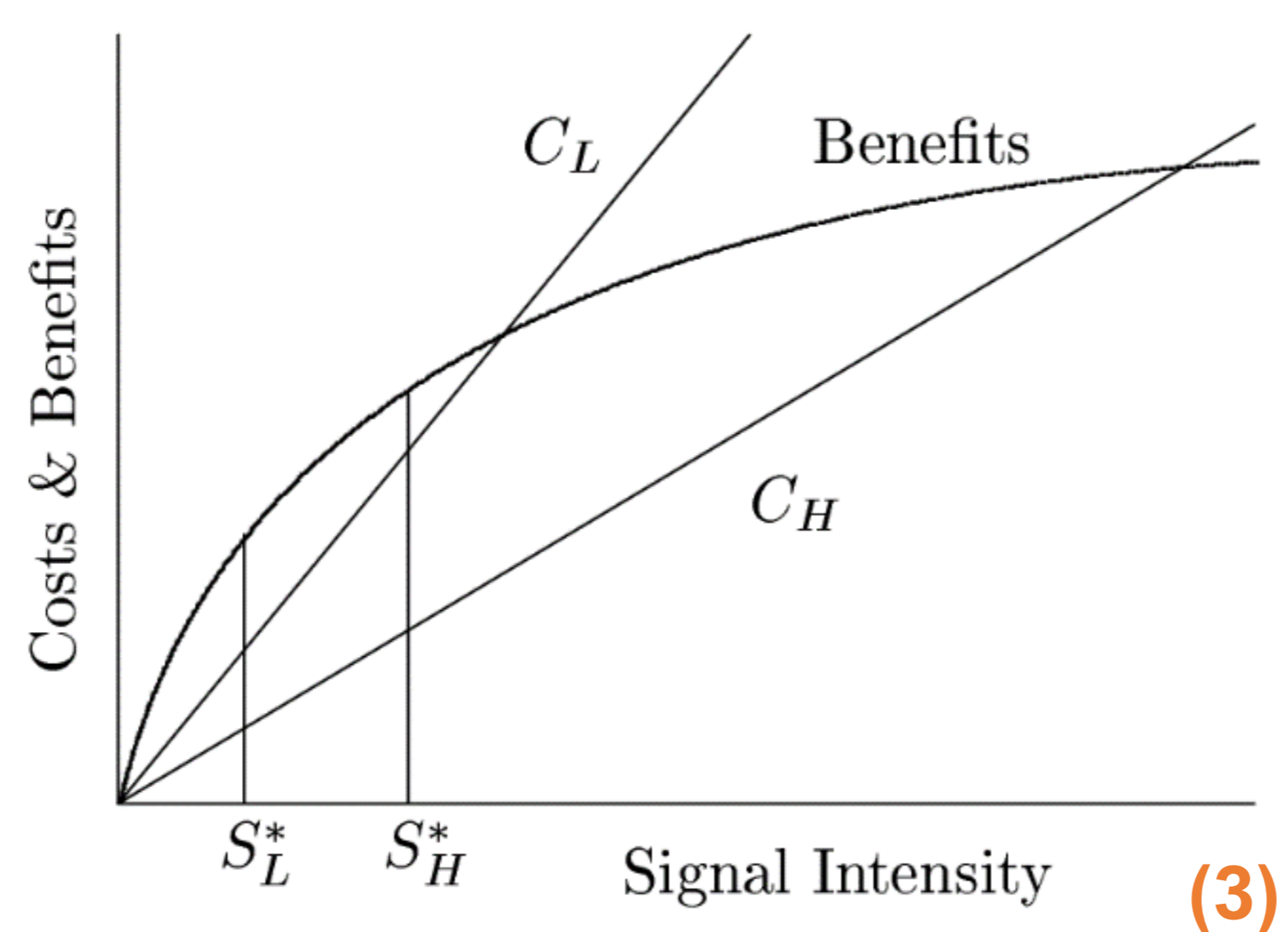


Research Question: Why do humans engage in costly cooperation with non-kin?

Model 1: Punishment

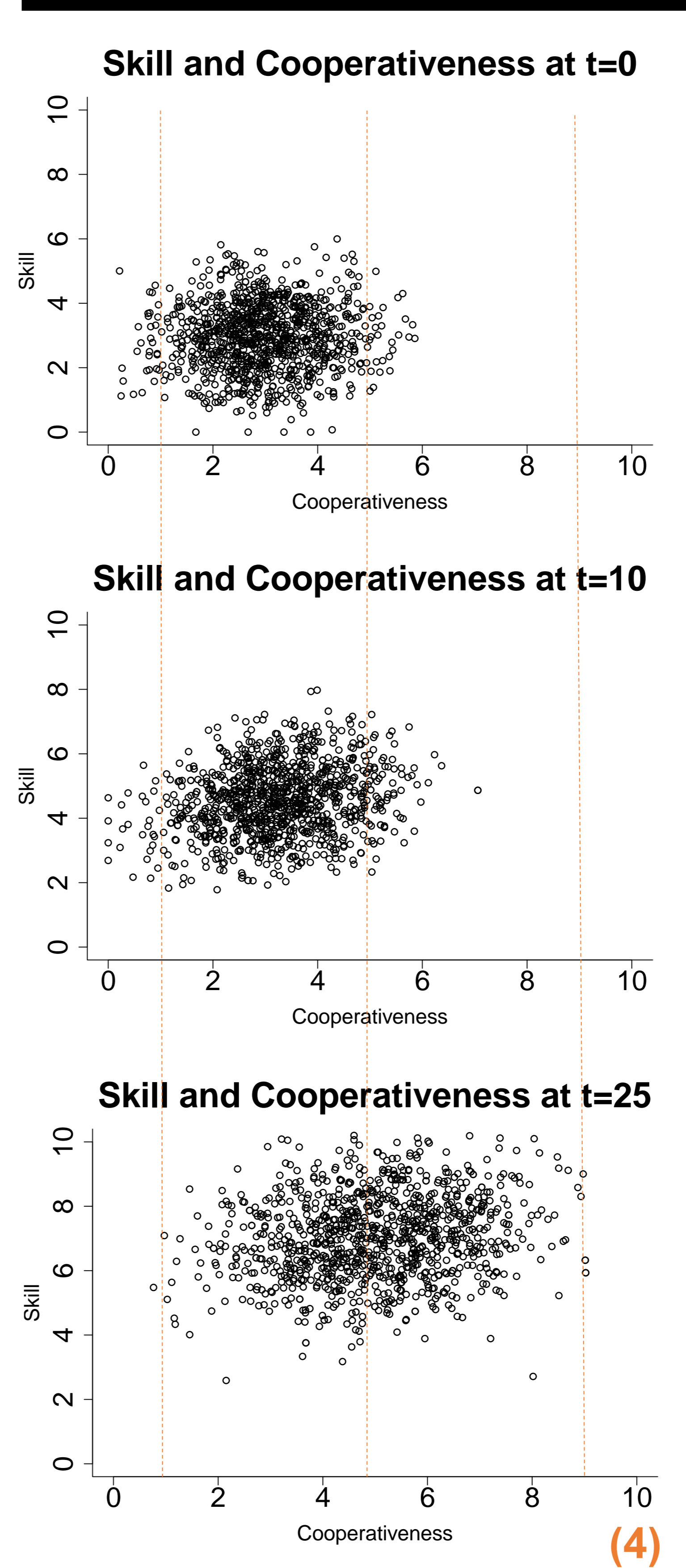


(2) Among many Late-Pleistocene appropriate foraging societies food is equally shared among all members of the group independent of their contribution (Hawkes & Bird, 2002).



(3) Though Zahavi (1975) became well-known for introducing the handicap principle, it was Grafen (1990) who formalized it and showed that the model works only when high-quality signalers have a higher optimal signaling level than low-quality signalers. Regarding hunting this would translate into the idea that more skilled hunters have lower costs producing the same signal.

Model 2: Reputation



ARGUMENT

- ❖ Humans are extraordinarily cooperative
- ❖ It is regarded as a puzzle how human cooperation could emerge in a Darwinian world
- ❖ Modeling suggested that punishment can secure human cooperation
- ❖ These models conceptualize agents as only having two choices: contribute or not. **We change the binary value to a continuous value integrating the quantity of the contribution of an agent**
- ❖ **We find that if punishment is the only force to secure cooperation, every agent would just do enough to not be punished (1)**
- ❖ We provide evidence that this is not enough for securing many forms of cooperation
- ❖ We review ethnographic data and find that food sharing is common among foraging societies, which are regarded as Late-Pleistocene appropriate
- ❖ Food is equally distributed between group members independent of their contribution (2)
- ❖ There must be a selective incentive: a benefit that only rewards suppliers.
- ❖ This selective incentive is reputation rather than nutrition according to the *handicap principle*.
- ❖ The handicap principle only works when high-quality individuals pay less for the same signal.
- ❖ In the case of hunting this would mean that more skilled individuals are less likely to be injured when for example hunting a hippo
- ❖ **We model reputation, in a model where skilled individuals can produce the same signal of cooperation with lower costs (3)**
- ❖ **We find: First the skill evolves then cooperativeness (4)**
- ❖ We analyse the two selective forces in the second model
- ❖ Costs are produced when the cooperative action is performed
- ❖ How does reputation work and why does it impact reproduction? (5)

The Benefit Function of Model 2: Values in Context

The Reputation Economy

Bibliography

- Grafen, A. (1990). Biological signals as handicaps. *Journal of Theoretical Biology*.
- Hawkes, K., & Bird, R. B. (2002). Showing-off, handicap signaling, and the evolution of men's work. *Evol. Anthropol.*
- von Heiseler, T. N. (2020). The Social Origin of the Concept of Truth – How Statements Are Built on Disagreements. *Frontiers in Psychology*.
- von Heiseler, T. N. (2022). How Language and Human Altruism Evolved Hand in Hand — The Backchannel Hypothesis. *Frontiers in Psychology*.
- Zahavi, A. (1975). Mate selection – a selection for a handicap. *Journal of Theoretical Biology*

