

# Chapter XVII

## Reputation: Social Transmission for Partner Selection

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### ABSTRACT

*This chapter is focused on social reputation as a fundamental mechanism in the diffusion and possibly evolution of socially desirable behaviour (e.g., cooperation, altruism, and norm-abiding behaviour). Reputation is seen as both a property of agents and a process of transmission of beliefs about this property. The main current views and hypotheses about reputation are found to underestimate the importance of the process of transmission. Next, a cognitive analysis of reputation and of its transmission is presented. Hypotheses concerning the transmissibility of reputation are discussed, and checked by means of simulation. Finally, speculations concerning the role of reputation in the evolution of reciprocal altruism are discussed, and ideas for future studies are sketched out.*

### INTRODUCTION

This chapter will be focussed on the cognitive properties of reputation favouring its transmission. We propose a definition of reputation as socially transmitted (meta-) beliefs (i.e., beliefs about beliefs) concerning properties of agents, namely their attitudes towards some socially desirable behaviour, be it cooperation, reciprocity, or norm-compliance. Such a definition led us to put forward the hypothesis that reputation plays a crucial role in the evolution of these behaviours: reputation transmission allows socially desirable behaviour to emerge and persist even with low probability of repeated interaction.

This role of reputation depends on the extent to which agents are likely to transmit it to one another. In this perspective, we are indebted to contributions from the memetic theory (for a definition of a meme, see Dawkins, 1976; Blackmore, 1999; for a recent collection of contributions on memes and memetics, see Aunger, 2000), especially in its current computational version (see Best and Edmonds, 2001).

Indeed, the cognitive properties of reputation and in particular the reasons why reputation is harboured in the mind help predict its transmissibility (Dawkins, 1976). In turn, transmissibility of reputation bears important consequences for the role of reputation with regard to socially desir-

able behaviour. This suggestion is supported by findings from several computer simulation studies on norm-abiding behaviour conducted in the last years within our research group. More generally, as will be argued at the end of this chapter, the view of reputation presented here may contribute to the still debated (see the discussion in Nature: Roberts & Sherratt, 2002) problem of reciprocal altruism theory in settings with low probability of repeated interaction.

The chapter is organised as follows. In the next subsection, we will situate the research on reputation in the broader context of the reciprocal interaction of culture and behaviour. Thereafter, the main current views and hypotheses about reputation will be presented and discussed, and found only partially consistent with current experience and observation. Next, our view of a cognitive model of reputation as a socially spreading meta-belief will be presented, and hypotheses about reputation transmissibility will be formulated. Findings from simulation studies about the role of reputation with regard to a special type of socially desirable behaviour, i.e. norm-compliance, will be shown to be consistent with the model provided before and confirm the emphasis laid on reputation transmission. In the following section, speculative hypotheses concerning the utility of the present approach for the theory of reciprocal altruism will be discussed at some length. Finally, a summary and ideas for future studies will be sketched out.

## When Does Culture Influence Behaviour?

This question has two different readings: (a) to what extent a given behaviour is influenced by culture as opposed to other factors (genetic, environmental, etc.)—here behaviour is given, and one must find the explanatory factor; (b) whether and to what extent a given cultural input influences behaviour—here culture is given, and one must predict its effect on behaviour.

The first meaning is a classic nurture/nature question: for example, to what extent are gender differences to be explained as an effect of culture rather than nature? This question presupposes a view of culture as less inertial, more dynamic and modifiable than nature.

Personally, we are more interested in the question whether a given behaviour is the result of an evolutionary process -- whether biological or cultural -- or is an accidental and contingent phenomenon. In this respect, the key question is how cultural evolution is possible at all.

The second meaning -- whether and to what extent a given cultural input influences behaviour -- seems more challenging. Two empirical cautions are necessary, though.

First, behaviour is a fundamental component of culture, which is (also) expressed through and by means of behaviour; consequently, it is difficult to isolate cultural phenomena that are not yet behavioural.

Second, cultural phenomena start to exist the moment they influence behaviour, otherwise they are simply products of human activity and thought. In other words, how could one tell that something belongs to culture if it is not reflected upon the behaviours of its members? What is culture, in the end, but the set of human products that affects their behaviours?

Therefore, culture is both an effect and a cause of behaviour and, before, of mental states and processes. (This feedback loop between behaviour and culture shows that the evolutionary process of emergence is not only a bottom-up process of emergence but a multidirectional one.)

Empirically, it is difficult to point out differences between culture and behaviour in nature. Therefore, a *scientific* approach to culture requires that cultural evolutionary processes are not only observed, but that corresponding hypotheses are formulated and *tested*. This is possible by means of artificial data especially if these are compared with natural ones. Artificial societies can help a lot, here, provided *multidirectional emergence* is taken into account in the modelling and implementation. These requirements have effects on the way agents are modelled and implemented: they need not only be adaptive, but also *endowed with mental states* and social cognitive capacities. This is, in our view, what is needed for the feedback loop between culture and behaviour to be explained.

In this chapter, we will argue for this claim using examples from simulation models of *altruism*. In particular, we will try to show the necessity of a social cognitive model of *reputation* as a fundamen-

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