What is so valuable about the case of revealed preference is that it presents a vision of a theory that the laboratory is absolutely necessary for testing (the authors' cautionary notes in chapter 7 on how best to model errors is extremely well taken in this case). In recent work, my co-authors and I have applied revealed preference arguments to characterize various modes of search both in theory (cf. Caplin and Dean 2011) and in the corresponding experiments (Caplin *et al*. 2011). The theories have no implications whatever for standard choice data, leading us to consider data on the 'choice process', comprising provisional choices in the pre-decision period. The advantages of the experimental laboratory over the field stand out particularly starkly in research of this type. If one is to gather such 'unnatural' data to explore the fit of a theory, one has to design the interface with which the data are gathered, and then present it to subjects in a controlled setting. If those of us who mine this approach can identify rich enough seams, economic experimentation will grow ever more central in the social scientific enterprise.

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Why We Cooperate, Michael Tomasello. MIT Press, 2009. xviii + 206 pages.

Based on the 2008 Tanner Lectures on Human Values, *Why We Cooperate* is Michael Tomasello's answer to the perennial question: What makes humans special? A psychologist with interests that span from anthropology to philosophy, Tomasello is one of the most influential voices in the contemporary field of cooperation studies. Based on threefold research in primate cognition, developmental social cognition and language acquisition, over the last two decades he has devised a theory of sociality that falls, broadly, into the area of empirical social ontology. His approach draws on the conceptual resources of collective, or shared, intentionality theory – one of philosophers' most fruitful recent contributions to the study of cooperation – to interpret the results of a battery of ingenious experiments with infants and our nearest primate relatives, such as chimpanzees. Tomasello is thus the first scientist who

tries to explicate human sociality using the resources of the shared intentionality paradigm.

The idea behind *Why We Cooperate*, that some 'group-thinking' ability underlies cooperative behaviour, is hardly new. The key insight, which is known from the work of philosophers like Raimo Tuomela, Margaret Gilbert and John Searle, is that people act out of intentional attitudes of a special type – 'collective' or 'shared' attitudes – when they do things together. To give a simple example, imagine we decide to visit an art gallery and check out in advance the opening times and available exhibitions. There is a distributive reading on which the collective action requires you and I to do our parts (you check opening times, I check the exhibitions) individually, but this is not the sense in which we commonly understand joint-action claims. In fact, it would not be *our* action if you asked about the opening times, and I asked about the exhibitions, without the intention to achieve the goal *together*. There is more to the intention of acting jointly than the intentions of the individual agents to do their parts.

A recurrent theme in Tomasello's work is that collective intentions presuppose a distinctive mode of reasoning, similar to what philosophers of economics call 'team reasoning'. Social scientists are familiar with this notion from the work of economists like Robert Sugden (2003) and Michael Bacharach (2006) concerning the logic by which people sometimes reason in game-theoretic situations of strategic interaction. Substituting individual goals and payoffs with collective ones, team reasoners can solve paradoxes of coordination and cooperation (such as hi-lo and the prisoner's dilemma) that have puzzled game theorists for decades. In Bacharach's account, team reasoning is triggered by a psychological framing effect: 'it takes two to tango', in the sense that two partners cannot think as a team unless the action is *framed* as a joint performance, something they intend and engage in as a 'we'.

This leads naturally to raise the question of what makes the sharing of intentional states possible. Philosophers have mainly focused on the logical structure of shared intention, i.e. what it means for individual agents to have collective attitudes. Yet, to say that you and I share the same attitude, in the sense that we frame ourselves as a 'we' for the sake of cooperation, is not very informative unless one specifies *how* group-thinking brings about the kind of mutual understanding that underpins joint action. Tomasello believes that mutualism consists in 'recursive mindreading'. If you and I decide to go out for dinner and arrange to meet after work, each one must be sure that we have the same thing 'in mind': I must understand your perspective on the situation and your role in the cooperative activity – which requires me to read into your mind. Humans are relentless mind-readers but chimps, too, show some rudimentary skill for intentional understanding. So, what makes the capacity for shared intentionality distinctively human is that the ability to understand the

others' intentions and goals be mutual, or recursive. I understand what is going on in your mind, and you do the same with me, only when we realize that *we* are intending as a group. And for something to be mutually known to all players, it must be shared in the sense of collective intentionality.

Although he takes this conceptual background as his point of departure, Tomasello gives it a decisively naturalistic twist. *Why We Cooperate* offers a convincing, albeit short, summary of his programme structured in two parts. In the first part Tomasello explains why cooperation is specifically human, comparing the social skills of infants and children with those of chimpanzees; in the second part, this proposal is discussed in a forum of scholars including Carol Dweck, Joan Silk, Brian Skyrms and Elisabeth Spelke. The discussion is not strictly limited to the content of the book however, something that might find the reader unprepared if she were not familiar with the history of *Why We Cooperate*. The book is the natural development of theories elaborated by Tomasello in previous publications; but *How We Cooperate* is not merely a compendium of earlier ideas. It rather testifies to the evolution of Tomasello's thinking, and is better seen as the third piece of a trilogy that begins with *The Cultural Origins of Human Cognition* (Tomasello 1999) and continues with *Origins of Human Communication* (Tomasello 2008). The main feature of *Why We Cooperate* compared with the other books is a better organized and more careful formulation of the shared intentionality hypothesis as the key to the developmental and evolutionary origins of cooperation.

In the introduction Tomasello outlines two ways in which the why-question posed in the title of the book can be tackled. There is an *ontogenetic* problem, comprising how and when a certain behavioural pattern emerges in a given organism and develops the way it does; and a *phylogenetic* problem concerning the evolutionary story of the trait, why it came to be. Both questions point to a common answer, which Tomasello identifies with the cognitive and motivational 'machinery' of shared intentionality. The central claim is that human cooperative behaviour is underpinned by inferential processes and pro-social motives observed in degrees of complexity that are not even remotely detected in the primate social world. These factors play different roles at different stages of Tomasello's investigation: as the proximal causes of how cooperativeness operates in humans, and as the answer to the ultimate question of what makes human sociality stand apart in the animal realm.

The first chapter of *Why We Cooperate* elucidates the motivational (proximal) side of shared intentionality in the context of the ontogeny of cooperation in the early stages of human development. There is a tendency in the literature to conceive of the problem of cooperation in terms of altruism – what makes people sacrifice themselves for somebody

else's needs (p. xvii). Although research in the roots of altruism is highly variegated, the question of the development of altruism has historically been cast on the bedrock of a broader philosophical debate based on the notions of nature and nurture. The dyad was coined by Francis Galton in 1874 when he defined nature as all that is biologically part of the organism, and nurture as every 'external' influence like enculturation or processes of socialization that affect man after birth. In the current use, 'nature' can also be read as innate, native, inborn, biological; whereas 'nurture' stands for learned, culture, environment. Between nature and nurture, Tomasello apparently sides with those who believe that humans come into existence with a natural instinct for cooperativeness, which he believes constitutes the basis for the most outstanding achievements of human culture. But his stance is more complex and pluralistic than it first appears, suggesting an 'interactionist' rather than a dichotomic interpretation of the influences of biology and culture on human behaviour. The upshot is a view dubbed the '*Early Spelke, Later Dweck* hypothesis' (p. 3), to charm two of the contributors to the book, which lends support to both processes.

Tomasello shares with Elisabeth Spelke, a forefront advocate of nativism in psychology, the view that there must be some biologically adapted feature of human cognition accounting for the differences between humans and their closest ancestors. But the consensus stops here. In fact, part of the originality of Tomasello's approach consists in offering a mixed interpretation of the origins of social cognition that rejects the innate/learned dichotomy while borrowing many of the concepts from the same debate. So, if it is correct that humans are motivated to act altruistically by nature, after a certain point in their life span – typically three years – processes of socialization start mediating the effects of this sort of indiscriminate cooperativeness. By 'socialization' Tomasello means the acquisition of social norms via children's direct experience with others, who teach them how things should be done, and the values and norms of their cultural group.

This idea enlightens the '*Later Dweck*' part of the hypothesis, although it does not capture, in my opinion, the originality of Carol Dweck's contribution. Dweck rightly makes the point that Tomasello draws insights from experiments with subjects who are at least one year old – so what about the sociality of younger infants? The evidence seems to be entirely consistent with the view that children's cooperative predispositions are caused by learning rather than innate processes. One might speculate that caregivers teach children how to be 'good' in their first year of life, and this is sufficient to bring about the patterns of altruistic behaviour observed from the beginning of the second year.

Tomasello's comparative studies come to the rescue at this point. Unsurprisingly, there are remarkable cross-species differences in cooperative behaviour, but the point is not that young children are

generous while apes are not; rather, there are altruistic behaviours that both species exhibit and others that are species-specific. This observation complicates the traditional evolution-of-altruism debate. Far from being a homogeneous and general trait of human behaviour, altruism clusters several tendencies with specific characteristics depending on the domain of activity. And when some of these predispositions are also detected in episodes of primate behaviour having profound evolutionary roots in great apes – this gives strong evidential back-up to the claim that humans come into life biologically prepared for altruism.

Take *helping*, the first cooperative proclivity that Tomasello lists along with *sharing* resources, like food, and *informing* others. Instrumental helping can be observed in many real-life situations and can be simulated in laboratory settings where children typically assist adults in grabbing something that falls out of reach. Tomasello proves on several counts that helping is not a form of altruism that depends on parental training or cultural transmission. Helping, sharing and informing are the pro-social motives that articulate humans' capacity to engage in mutualistic or collaborative activities, those in which individuals supporting others are simultaneously advantaging themselves.

Mutualism, which Tomasello analyses in the second chapter of *Why We Cooperate*, is the response to the phylogenetic question: How has human society evolved out of the primate social world? Tomasello echoes Brian Skyrms' proposal that collaborative activities must have emerged in a scenario that favours the evolution of social cooperation, such as a 'stag hunt'. A stag hunt is a common-interest (coordination) game in which the best strategy for the players is to collaborate, because it yields a bigger payoff than the payoffs that the players can get on their own. For Tomasello, human-style cooperation could not have evolved but in an environment where mutualism prevailed over constant competition, exemplified by the 'classic' prisoner-dilemma type of scenario. The stag-hunt story covers one side of the '*Silk for Apes, Skyrms for Humans* hypothesis' discussed in the second chapter of the book, mirroring the structure of the first.

To suggest that mutualism is the ultimate cause of human cooperation is a risky move for the reasons that Joan Silk points out in her commentary. Silk's research on the mechanisms of non-human social relations, including kinship and nepotism, casts serious doubts on the evolutionary hypothesis of Tomasello, with the result to reinstate the problem of altruism at the core of the human-uniqueness discourse. According to Silk, a more realistic characterization of the stag hunt holds that the players converge on the socially superior profile because this is the best strategy for *each* of them. That is, a stag hunt scenario obtains when individual and group interests are perfectly aligned. In reverse, when the interests of the players diverge from the welfare of the group,

the preferred strategy is not one in which all people benefit from working collaboratively with each other.

Tomasello shows little appreciation of this point because, I believe, his interpretation of mutualism is different from the altruistic-driven interpretation of Silk. He does not direct scientific attention to the question of whether individual agents are 'generous' or 'nice' towards each other by nature. The question is, instead, what sort of mechanism might have enabled humans to start picking out the best profile to everybody's benefit *if* they had not known first how to discern the group's from their own interests. To know how to achieve mutualistic gains, two people need be in the position to discriminate the strategy that benefits the group from their own. Mutualism, in sum, is another term for shared intentionality, meaning the kind of *mindset* that is responsible for the evolution of human-style collective intentional behaviour.

The evolutionary sequence imagined by Tomasello, in other words, goes as follows: at some stage of their evolutionary history our ancestors came to play stag-hunt games in an ecological niche that, for some reason, differed from that of our closest simian relatives. Playing these games of coordination strengthened the capacity to see things in the context of interaction from an impersonal ('we') perspective. This in turn allowed the development of higher skills that ground more complex social activities, based on language and trust for instance, which in turn are necessary to sustain cooperation in mixed-motives games such as the prisoner's dilemma.

So 'joint attentional activities' (p. 69) are the first manifestation of genuine mutualism in human ontogeny. There are a number of studies proving that infants around their first birthday engage successfully in episodes of cooperation that require understanding of some basic communicative exchange. Consider toddlers playing with their mums who point to some toy for them to reach. How would these forms of adult-like interaction be possible without the players understanding that the context of play is one of joint action? For Tomasello, the infant's mutual responsiveness to adults' gestures is evidence that they are framing themselves and their caretakers as part of a 'we', which is what allows them to recognize the target of a collaborative activity.

Chimpanzees, in contrast do not engage in the kind of mutualistic activities observed in joint attention situations. They never use pointing gestures to inform others, but only to obtain what they want. They do not try to re-engage a partner in a joint activity that has stopped. Even during group hunting, they take different positions in the hunting formation only with the aim of maximizing their individual chance of catching the prey. Chimps do not engage in collaborative actions because they are not adapted to think 'as a team', to share the mental states of others by taking different perspectives on the joint enterprise. Lack of shared intentionality

prevents the great apes from developing higher forms of cooperation and ultimately to create complex socio-institutional structures.

At this point Tomasello is faced with a 'classic' gap in the collective intentionality literature: how do we confirm – or disconfirm – the hypothesis that individuals think and act as a team? Group-thinking is not directly observable in fact. Although there is a well-established experimental tradition on social identity and group identification in social psychology, philosophers have explored the 'naturalness' of group-thinking by asking whether the *concept* of collective intentional behaviour can be characterized by means of the concepts that we already deploy in understanding individual action. That the theory can be tested is a claim that follows in principle from philosophers' commitment to naturalism, but has long suffered from lack of answers in practice. By embedding it into a natural scientific approach to human development, thus Tomasello challenges the suspicion that group-thinking is not directly observable and makes it susceptible to overall experimental check. This is, of course, not to say that conceptual analyses haven't contributed important insights into the philosophy of collective action and, ultimately, social science. The point is that thanks to Tomasello collective intentionality is no longer supported by commonsense and a priori intuitions only, but is rather the result of a natural scientific approach.

Although it is undoubtedly difficult to come up with experiments that test at the behavioural level whether people reason in I- or we-modality, nonetheless in Tomasello's work the evidence illuminates and justifies the theory, not the contrary. Although conceptual work is integral to the formulation of the general hypothesis, Tomasello does not resort to the analysis of collective intentional predicates in ordinary language. His inquiry into the naturalness of collective intentionality at the foundation of cooperative behaviour requires theory and practice to be intimately mingled.

The study of cooperation is a magnificent example of how the 'joint activity' of philosophers and scientists from different fields of specialization has increased our understanding of human sociality. Some philosophers of economics are acquainted with the contributions of evolutionary game theory and experimental economics to this thriving debate, but few of them are aware of the recent advances made by developmental psychologists or of the insights provided by comparative studies. The work of Tomasello and his colleagues provides the best and most exciting point of entry into a literature that will certainly shape philosophical debates for the years to come.

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Health, Luck, and Justice, Shlomi Segall. Princeton University Press, 2010. x + 239 pages.

Health, Luck, and Justice (HLJ) is an ambitious monograph that articulates a sophisticated luck-egalitarian theory of distributive justice and applies it to questions concerning the distribution of healthcare and health within and across nations. At the same time, it criticizes the two main egalitarian alternatives, Daniels's fair equality of opportunity account, and Anderson's sketchier democratic equality account. In laying out a luck egalitarian approach so lucidly, Shlomi Segall shows us not only the advantages of the luck egalitarianism that he argues for, but also its serious drawbacks both as a general view of distributive justice and specifically as a guide to justice with respect to healthcare and health.

After a first chapter that lays out a version of luck egalitarianism and argues for its virtues as opposed to alternative versions of egalitarianism, HLJ is divided into three parts. This review will focus on the first two parts, which deal respectively with healthcare and health. In the third part, Segall argues for a cosmopolitan view of health in which the claims of poor health either on healthcare resources or on non-medical means of redressing inequalities are independent of one's national affiliation. He also rejects 'devolution' – that is permitting sub-national groupings control over their own per-capita share of the health budget.

In the introductory chapter of *Health, Luck, and Justice*, Segall argues that 'luck egalitarians would typically say that the reversal of bad luck is the most radical way in which social injustice can be addressed, and therefore any theory that does not fully neutralize bad luck falls short of meeting the requirements of social justice' (HLJ: 11). 'Luck' here is 'brute luck' – those things for which individuals are not responsible or over which they have no control. How to distinguish brute luck from so-called 'option luck' has been a controversial matter. Segall offers a novel construal (though he mentions that his view is related to views developed in Sandbu (2004) and Stemplowska (2009)).