

# Parallels between joint action and biological individuality

Proposal for the Individuals across science conference

## Extended abstract:

Within the last three decades, philosophers have suggested many definitions for human joint action. Their aim is to find out what relations exist between individuals who are said to cooperate, to act “together” or “jointly”, and in some sense what makes a group of individuals similar to a higher-level individual itself. One striking feature of this literature is the multiplicity of definitions and their apparent irreducibility to one another. Indeed, most authors seem to have various intuitions as to the conceptual core of human joint action. It can be the presence of mutually consistent plans of action (Bratman 1992, 1993), of normative commitments (Gilbert 1989), of collective goals (Miller 2001), of irreducible joint intentions (Searle 1990, 1995) or of collectively built reasons to act (Tuomela 2007). Some authors have also tackled the similarity between groups and individual agents without reference to joint action, arguing that the key to this similarity is rational consistency (List and Pettit 2010). All these accounts are based on intuitive real-life examples of joint action and thus are *prima facie* equally compelling.

To adjudicate between these accounts, we need some constraints on joint action beyond intuitive examples. I suggest that any satisfying definition should meet an *efficiency constraint*. Whatever defines human cooperation, it is by and large successful, not by being automatic or wired but by being *reliable*. We are routinely very good at cooperating and examples of successful cooperation abound in our daily life; overall, cooperative behaviour benefits us. Any account of joint action should be made of components which can allow us to justify this general reliability. It is not enough to say that there is cooperation whenever agents share a goal without an explanation of how agents usually manage to identify partners with whom they share a goal.

How could the efficiency constraint be met? One could look for rational or evolutionary explanations of joint action, that is, the benefits of cooperative behaviour could be cashed out in terms of material payoffs or of fitness. However, none of these avenues have provided any convincing results so far. Definitions of joint action usually neglect its rational dimension; if mentioned at all rationality is considered as a welcome but non-necessary feature of joint action (Tuomela 2000). Some have tried to gather rational explanations such as team reasoning from definitions of joint action (Hakli et al. 2010), but the parallel is doubtful (Paternotte, submitted). As for evolutionary explanations, group selection has been equally used to informally justify many different accounts (Bacharach 2006, Tuomela 2007); arguably, ultimate explanations cannot provide precise enough constraints on proximate mechanisms.

A more promising avenue is the following. As defining a joint action is linked to defining when a group of human agents is itself similar to an individual, generic definitions of individuality in other fields may be used to constrain accounts of joint action. As a matter of fact, there is a wealth of definitions of biological individuality. Moreover, just as concerning joint action, there is no consensus on the right definition of a biological individual. One difference is that a list of the possibly relevant components of a biological individual have been identified: spatial contiguity, genetic similarity, division of labour, presence of policing, bottlenecks, shared fate, result of group selection, unit of adaptation, degree of cooperation

and of conflict, etc (Buss 1987; Godfrey-Smith 2009; Michod 1999; Queller and Strassmann 2009; Gardner and Grafen 2009). Moreover, the biological literature is ripe with analyses of the interactions of these various factors (Bourke 2011). Because the efficiency of biological factors, and of combinations thereof, can usually be cashed out directly in terms of fitness benefits, accounts of biological individuality naturally meet an efficiency constraint. As a consequence, I suggest that the way to tackle the efficiency constraints is to look not for evolutionary *explanations* of joint action in evolutionary terms, but for *analogies* between components of joint action and of biological individuality. A definition of joint action definition may be justified by its close similarity with one of biological individuality, as the latter will be constituted of factors that warrant fitness benefits.

And indeed, it appears that conceptual analogies between components of joint action and of biological individuality can be drawn. Gilbert's normative commitments and Bicchieri's (2006) emphasis on punishment echo the role of biological policing; the existence of Bratman's mutually consistent plans of actions are similar to that of a division of labour between agents; Miller's shared goals and Tuomela's (2007) s Collectivity condition are similar to the presence of a shared evolutionary fate; commonality of interests the repression of competition between parts; agents sharing a property echo genetic similarity; Bacharach (2006) and Sugden's (2000) team reasoning, in which agents maximize what is better from a group's point of view, smacks of group selection (Sober and Wilson 1998, Okasha 2006); joint action with uncertain membership (Gold and Sugden 2007) echoes the presence of individual selection within organisms (Clarke 2010).

By way of a concrete example, one extremely promising lead is the following. One of the major psychological components of human cooperation is group identification (the fact that individuals define their identity by some group membership, whether real or imagined; see Tajfel et al. 1971, Tajfel 1973, Brewer and Gardner 1996). Intuitively, group identity may seem close to biological factors such as a shared fate or a common reproductive interest. However, recent empirical data has managed to identify two ways (deductive and inductive) in which group identification can be triggered: one is based on salient shared properties of agents indeed; but the other relies on their differences and complementarity. In other words, group identification echoes the fundamental distinction between two classic pathways to biological individuality, namely between relatives (fraternal) and non-relatives (egalitarian; e.g. mutualisms in which species complement one another) (Queller 2000, 2007; Bourke 2011). If this analogy holds water, then it would support the necessity of a group identification component for human joint action (which is still contested; see Bicchieri 2006, chap.4).

This paper aims to provide a systematic map of such conceptual analogies, to assess their degree of accuracy as well as their explanatory power, in order to find out how the biological accounts of individuality can be used to determine a satisfying account of human joint action. To my knowledge, this connection between the two literatures has never been explored, although the above reasons strongly suggest it should.

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