Hypothetical Cognition and Coalition Enforcement
Language, Morality, and Violence

Lorenzo Magnani (lmagnani@unipv.it)
Department of Philosophy, University of Pavia
P.zza Botta, 6 - 27100 Pavia, Italy

Abstract

The so-called coalition enforcement hypothesis sees humans as self-domesticated animals engaged in the continuous activity of building morality, incorporating at the same time punishment policies. Its main intellectual value stresses the role in human and animal groups of more or less stable stages of cognitive cooperation through morality and related inexorable violence: morality and violence are seen as strictly intertwined with social and institutional aspects, implicit in the activity of cognitive niche construction. Hypothetical thinking and abduction are often embedded in various kinds of the so-called fallacious reasoning: to better grasp its philosophical status I think it is intriguing to stress that hypothetical cognition might be favored for reasons of – so to say – "social epistemology" and moral reasoning. Indeed, in evolution, coalition enforcement works through the building of social cognitive niches seen as new ways of diverse human adaptation, where guessing hypotheses is central and where guessing hypotheses is occurring as it can, depending on the cognitive/moral options human beings adopt. Basically, the coalition enforcement framework refers to cooperation between related and unrelated human animals to produce significant mutual benefit that exceeds costs and is thereby potentially adaptive for the cooperators.

Keywords: Hypothetical cognition; coalition enforcement; morality; violence.

Hypothetical Cognition and Coalition Enforcement: Language, Morality, and Violence

The study on abductive cognition (Magnani, 2009) demonstrates that the activity of guessing hypotheses touches on the important subject of morality and moral reasoning. In the activity of niche construction *hypothetical thinking* (and so *abduction*) is fundamental; hypothetical thinking is often embedded in various kinds of the so-called fallacious reasoning (which in turn constitutes a relevant part of the linguistic cognitive niches where human beings are embedded). To better grasp its cognitive status I think it is intriguing to stress that hypothetical cognition might be favored for reasons of – so to say – "social epistemology" and moral reasoning.

In the framework of "distributed morality", a term coined in my recent book (Magnani, 2007), the role of abduction is central in moral decision, both in deliberate and unconscious cases and in its relationship with hardwired and trained emotions. The fact that abduction is partly explicable as a more or less "logical" operation related to the "plastic" cognitive endowments of all organisms and partly as a biological instinctual phenomenon, naturally leads to the rediscovery of animals as "cognitive agents" but also as endowed with moral intrinsic value. Darwin noted that studying cognitive capacities in non-human animals possesses an "independent interest, as an attempt to see how far the study of the lower animals throws light on one of the highest psychical faculties of man" – the moral sense (Darwin, 1981). Further, the problem of the abductive construction of extended cognitive niches offers a chance to see the role in human cognition of management and correction of maladaptive artifactual niches, which immediately relates to the relationships between morality and knowledge in our technological world and to the role of the creative hypothetical reasoning employed in such a task.

The analysis of the interplay between fallacies and abduction (Bardone & Magnani, 2010) has acknowledged that: 1) abductive and other kinds of hypothetical reasoning are involved in dialectic processes, which are at play in both agent-based everyday and scientific settings; 2) they are strictly linked to so-called smart heuristics and to the fact that very often less information gives rise to better performance; 3) heuristics linked to hypothetical reasoning like "following the crowd", or social imitation, more or less linked to fallacious aspects which involve abductive steps, are often very effective. I stressed in (Magnani, 2010) that these and other fallacies, are linked to what Réné Thom calls "military intelligence", which relates to the problem of the role of language in the so-called *coalition enforcement*. It is in this sense that I pointed out the importance of fallacies as "distributed military intelligence".

The aim of this paper is to clarify the idea of "coalition enforcement". This idea illustrates a whole theoretical background for interpreting the topics above concerning morality and hypothetical reasoning as well as my own position, which resorts to the hypothesis about the existence of a strict link between morality and violence. The theme is further linked to some of the issues dealt in (Magnani, 2010), where I value Thom's attention to the moral/violent role of what he calls "proto-moral conflicts": I contend that, for example, the fundamental function of language can only be completely seen in the light of its intrinsic *moral* (and at the same time *violent*) purpose, which is basically rooted in an activity of *military intelligence*.

Coalition Enforcement

The coalition enforcement hypothesis, put forward by (Bingham, 1999, 2000), aims at providing an explanation of the "human uniqueness" and spectacular ecological dominance that is at the origin of human communication and language, and of the role of cultural heritage. From this perspective, and due to the related constant moral and punishing effect of coalition enforcement (which has an approximately two-million year evolutionary history), human beings can be fundamentally seen as *self-domesticated animals*. I

think the main speculative value of this hypothesis consists in stressing the role of the more or less stable stages of cooperation through morality (and through the related inexorable violence).

The hypothesis implicitly shows how both *morality* and *violence* are strictly intertwined with the social and institutional aspects, implicit in the activity of cognitive niche construction. In evolution coalition enforcement works through the building of social *cognitive niches* as a new way of diverse human adaptation. Basically the hypothesis refers to cooperation between related and unrelated animals to produce significant mutual benefits that exceed costs and are potentially adaptive for the cooperators. Wilson *et al.* (Wilson, Timmel, & Miller, 2004) aim at demonstrating the possibility that groups engage in coordinated and cooperative cognitive processes, thus exceeding by far the possibilities of individual thinking , by recurring to a hypothesized "group mind" whose role would be fundamental in social cognition and group adaptation. The formation of appropriate groups which behave according to explicit and implicit more or less flexible rules of various types (also moral rules, of course) can be reinterpreted – beyond Wilson's strict and puzzling "direct" Darwinian version – as the "social" constitution of a cognitive niche, that is a cognitive modification of the environment which confronts the coevolutionary problem of varying selective pressures in an adaptive or maladaptive way.

In hominids cooperation in groups (which, contrary to the case of non-human animals, is largely independent from kinship) fundamentally derived from the need to detect, control, and punish social parasites, who for example did not share meat (also variously referred to as free riders, defectors, and cheaters). These social parasites were variously dealt with by killing or injuring them (and also by killing cooperators who refused to punish them) *from a distance* using projectile and clubbing weapons. In this case injuring and killing are cooperative and remote (and at the same time they are "cognitive" activities). According to the coalition enforcement hypothesis, the avoidance of proximal conflict reduces risks for the individuals. Of course cooperative morality that generates "violence" against unusually "violent" and aggressive free riders and parasites can be performed in other weaker ways, such as through denial of future access to a resource, injuring a juvenile relative, gossiping to persecute dishonest communication and manipulative behaviors within groups or war waged by some groups against less cooperative ones, etc.[1]

In such a way group cooperation (for example for efficient collective hunting and meat sharing through control of free riders) has been able to adaptively evolve and to render parasitic strategies no longer efficaciously adaptive. Through cooperation and remote killing, individual costs of punishing are greatly reduced and so is individual aggressiveness and violence, "perhaps" because violence is morally "distributed" in a more sustainable way: "Consistent with this view, con-

temporary humans are unique among top predators in being relatively placid in dealing with unrelated conspecific nonmates under a wide variety of circumstances" (Bingham, 1999, p. 140). [I have to note, "contrarily to the common sense conviction", formed by the huge amount of violence human beings are still everyday faced with!]. Hence, it has to be said that humans, contrarily to non-human animals, exchange a fundamental and considerable amount of relatively reliable information with unrelated conspecifics (Bingham, 1999, p. 144).

The role of docility is worth citing (which relates to the already recognized distressing human tendency to conform, displace responsibility, comply, and submit to authority of dominant individuals, emphasized by social psychology – cf. (Dellarosa Cummins, 2000, p. 11)). According to Herbert Simon, humans are docile in the sense that their fitness is enhanced by "[. . .] the tendency to depend on suggestions, recommendations, persuasion, and information obtained through social channels as a major basis for choice" (Simon, 1993, p. 156). In other words, humans support their limited decision-making capabilities, relying on external data obtained through their senses from their social environment. The social context gives them the main data filter, available to increase individual fitness. Therefore, docility is a kind of attitude or disposition underlying those activities of cognitive niche construction, which are related to the delegation and exploitation of ecological resources. That is, docility is an adaptive response to (or a consequence of) the increasing cognitive demand (or selective pressure) on those information-gaining ontogenetic processes, resulting from an intensive activity of niche construction. In other words, docility permits the inheritance of a large amount of useful knowledge while lessening the costs related to (individual) learning. In Simon's work, docility is related to the idea of socializability, and to altruism in the sense that one cannot be altruistic if he or she is not docile. However, the most important concept is docility and not altruism, because docility is the condition of the possibility of the emergence of altruism. I believe, in the light of the coalition enforcement hypothesis, that moral altruism can be correctly seen as a subproduct of – or at least intertwined with – the violent behavior needed to "morally" defend and enforce coalitions. I have said that groups need to detect, control and punish social parasites, that for example do not share meat, by killing or injuring them (and any cooperators who refuse to carry out punishment) and to this aim they have to gain the cooperation of other potential punishers.

Research on chimps' behavior shows that punishment can be seen as altruistic for the benefit of the other members of the group (and to the aim of changing the future actions of the individual being punished), often together with "the function of keeping the top ranking male, or coalition of males, at top, or preserving the troop-level macrocoalition that disproportionately serves the interests of those on top" (cf. (Rohwer, 2007, p. 805)). The last observation also explains how altruistic punishment can serve individual purposes (and so it can

---

[1]On the moral/violent nature of gossip and fallacies cf. (Bardone & Magnani, 2010).

be captured by individual selection models): in chimps it reflects the desire to maintain status, that is a new high position in the hierarchy. Rohwer's conclusion is that "altruistic punishment need not have originated by group selection, as the Sober and Wilson model assumes. Seen through the lens of the linear dominance hierarchy, it is reasonable to suspect that altruistic punishment may have originated primarily through individual selection pressures" (cit. p. 810).[2]

I have said above that groups need to detect and punish social parasites by killing or injuring them (and any cooperators who refuse to carry out punishment) and to this aim they have to gain the cooperation of other potential punishers. This explains altruistic behavior (and the related cognitive endowments which make it possible, such as affectivity, empathy and other non violent aspects of *moral* inclinations) which can be used in order to reach cooperation. To control free-riders inside the group and guard against threat from other alien groups, human coalitions – as the most gregarious animal groups – have to take care of the individuals who cooperate. It is from this perspective that we can explain, as I have said above, quoting Bingham, why contemporary humans are not only violent but *also* very docile and "[. . .] unique among top predators in being relatively placid".[3]

The problem of docility is twofold. First, people delegate data acquisition to their experience, to external cultural resources and to other individuals. Second, people generally put their trust in others in order to learn. A big cortex, speech, rudimentary social settings and primitive material culture furnished the conditions for the birth of the mind as a universal machine (Magnani, 2009, chapter three). It is contended that a big cortex can provide an evolutionary advantage only in the presence of a massive store of meaningful information and knowledge on external supports that only a developed (even if small) community of human beings can possess. If we consider high-level consciousness as related to a high-level organization of the human cortex, its origins can be related to the active role of environmental, social, linguistic, and cultural aspects. It is in this sense that docile interaction lies at the root of our social (and neurological) development. It is obvious that docility is related to the development of cultures, morality, cultural availability and to the quality of cross-cultural relationships. Of course, the type of cultural dissemination and possible cultural enhancements affect the chances that human collectives have to take advantage of docility and thus to increase or decrease their fitness.

The direct consequence of coalition enforcement is the development and the central role of cultural heritage (morality and sense of guilt included), that is of those *cognitive niches* as new ways of arriving at diverse human adaptations. In this perspective the long-lived and abstract human sense of guilt represents a psychological adaptation, "abductively" anticipating an appraisal of a moral situation to avoid becoming a target of coalitional enforcement. We have to recall that Darwinian processes are involved not only in the genetic domain but also in the additional cultural domain, through the selective pressure activated by modifications in the environment brought about by cognitive niche construction. According to the theory of cognitive niches (Odling-Smee, Laland, & Feldman, 2003), coercive human coalition as a fundamental cognitive niche constructed by humans becomes itself a major element of the selective environment and thus imposes constraints (designed by *extragenetic information*) on its members.[4]

Usually it is said that Darwinian processes operating on genetic information produce human minds whose properties somehow include generation of the novel, complex adaptive design reflected in human material artifacts *sui generis*. However, following Bingham, these explanations

> [. . .] fail to explain human uniqueness. If building such minds by the action of Darwinian selection on genetic information were somehow possible, this adaptation would presumably be recurrent. Instead, it is unique to humans. Before turning to a possible resolution of this confusion, two additional properties of human technological innovation must be recalled. First, its scale has recently become massive with the emergence of behaviorally modern humans about 40,000 years ago. Second, the speed of modern human innovation is unprecedented and sometimes appears to exceed rates achievable by the action of Darwinian selection on genetic information (Bingham, 1999, p. 145).

Hence, a fundamental role in the evolution of "non" genetic information has to be hypothesized. Appropriately, coalition enforcement implies the emergence of novel extragenetic information, such as large scale mutualistic information exchange – including both linguistically and model-

---

[2]On the puzzling problem of the distinction between individual and group selection for altruism in the framework of multilevel selection cf. (Rosas, 2008): multilevel selection theory claims that selection operates simultaneously on genes, organisms, and groups of organisms. A history of the debate about altruism is given by (Dugatkin, 2008).

[3]On the intrinsic moral character of human communities – with behavioral prescriptions, social monitoring, and punishment of deviance – for much of their evolutionary history cf. (Wilson, 2002, p. 62) and (Boehm, 1999). (Lahiti & Weinstein, 2005) further emphasize the evolutionary adaptive role of morality (and so of cooperation) as "group stability insurance". The exigence of morality as group stability would explain the "viscosity" of basic aspects of the morality of a group and why morality is perceived as having an air of absolutism.

[4]Some empirical evidence seems to support the coalition enforcement hypothesis: fossils of *Homo* (but not in australopithecines) show, on observation of skeletal adaptations, how selection developed an astonishing competence in humans relating to the controlled and violent use of projectile and clubbing weapons (bipedal locomotion, the development of gluteus maximus muscle and its capacity to produce rotational acceleration, etc.). The observed parallel increase in cranial volume relates to the increased social cooperation based on the receipt, use and transmission of "extragenetic information". Moreover, physiological, evolutionary, and obstetric constraints on brain size and structure indicate that humans can individually acquire a limited amount of extragenetical information, that consequently has to be massively stored and made available in the external environment.

based[5] communication – between unrelated kin. As mentioned above, it is noteworthy that extragenetic information plays a fundamental role in terms of ideas transmitted (cultural/moral aspects), behavior, and resources embedded in artifacts (ecological inheritance). It is easy to acknowledge that this information can be stored in human memory – in various ways, both at the level of long-lived neural structures that influence behavior, and at the level of external devices (cognitive niches), which are transmitted indefinitely and are thus potentially immortal – but also independently of small kinship groups. Moreover, transmission and selection of extragenetic information is at least partially independent of an organism's biological reproduction.

Coalition Enforcement Through Abduction: the Moral/Violent Nature of Language

In a study concerning language as an adaptation Pinker says: "[...] a species that has evolved to rely on information should thus also evolve a means to exchange that information. Language multiplies the benefit of knowledge, because a bit of know-how is useful not only for its practical benefits to oneself but as a trade good with others". The expression "trade good" seems related to a moral/economical function of language: let us explore this issue in the light of the coalition enforcement hypothesis I have introduced in the first section (Pinker, 2003, p. 28).

Taking advantage of some ideas brought up by Thom's catastrophe theory on how natural syntactical language is seen as the fruit of social necessity,[6] its fundamental function can only be seen clearly if also linked to an intrinsic *moral* (and at the same time *violent*) aim, which is basically rooted in a kind of *military intelligence*. Thom says language can simply and efficiently transmit *vital* pieces of information about the fundamental biological oppositions (life, death – good, bad). It is from this perspective that we can clearly see how human language – even at the level of more com-

plicated syntactical expressions – always carries information (pregnances, in Thom's terms) about moral qualities of persons, things, and events. Such qualities are always directly or indirectly related to the survival needs of the individual and/or of the group/coalition. Thom too is convinced of the important role played by language in maintaining the structure of societies, defending it thanks to its moral and violent role: "information has a useful role in the stability or 'regulation' of the social group, that is, in its defence" (Thom, 1988, p. 279).

I have already illustrated that in human or pre-human groups the appearance of coalitions dominated by a central leader quickly leads to the need for surveillance of surrounding territory to monitor prey and watch for enemies with the potential to jeopardize the survival of the coalition.

This is an idea shared by Thom who believes that language becomes a fundamental tool for granting stability and favoring the indispensable manipulation of the world "thus the localization of external facts appeared as an essential part of social communication" (Thom, 1988, p. 26), a performance that is already realized by naming[7] (the containing relationship) in divalent structures: "X is in Y is a basic form of investment (the localizing pregnance of Y invests X). When X is invested with a ubiquitous biological quality (favorable or hostile), then so is Y" (*ibid.*). A divalent syntactical structure of language becomes fundamental if a *conflict* between two outside agents has to be reported. The trivalent syntactical structure subject/verb/object forges a salient "messenger" form that conveys the pregnance between subject and recipient. In sum, the usual abstract functions of syntactic languages, such as conceptualization, appear strictly intertwined with the basic *military* nature of communication.[8]

I contend that this military nature of linguistic communication is intrinsically "moral" (protecting the group by obeying shared norms), and at the same time "violent" (for example, killing or mobbing to protect the group). This basic moral/violent effect can be traced back to past ages, but also when we witness a somehow *prehuman* use of everyday natural language in current mobbers, who express strategic linguistic communications "against" the mobbed target. These strategic linguistic communications are often performed thanks to *hypothetical reasoning*, abductive or not. In this case the use of natural language can take advantage of efficient hypothetical cognition through gossip, fallacies and so on, but also of the moral/violent exploitation of apparently more respectable and sound truth-preserving and "rational" inferences. The narratives used in a dialectic and rhetorical settings qualify the mobbed individual and its behavior in a way that is usually thought of by the mobbers themselves (and by the individuals of their coalition/group) as moral, neutral, objective, and justified while at the same time hurting the mobbed individual in various ways. Violence is very of-

---

[5]Examples of model-based cognition are constructing and manipulating visual representations, thought experiment, analogical reasoning, etc. but it also refers to the cognition animals can get through emotions and other feelings. Charles Sanders Peirce already acknowledged the fact that all inference is a form of sign activity, where the word sign includes various model-based ways of cognition: "feeling, image, conception, and other representation" (Peirce, 1931-1958, 5.283).

[6]A view that is shared by other approaches in cognitive science, cf. the case of (Mithen, 2007), and the so-called Machiavellian hypothesis: posed in the late 1980s (Whiten & Byrne, 1988, 1997; Byrne & Whiten, 1988), the "social brain hypothesis" (also called "Machiavellian intelligence hypothesis") holds that the relatively large brains of human beings and other primates reflect the computational demands of complex social systems and not only the need of processing information of ecological relevance: ability to manipulate information and not simply to remember it, to recognize visual signals to identify other individuals, sufficient memory for faces and to remember who has a relationship with whom, use of tactical deception, coalition, ability to understand intentions, to hold false beliefs, and "mind-read", known as "theory of mind" etc. Language itself would have at a certain point grooming as a way of creating social cohesion as the size and complexity of the social group increased (cf. also (Dunbar, 1998, 2003)).

[7]It is important to stress that what Thom calls "pregnant" forms, when receiving names, they loose their alienating character.

[8]More details on Thom's theory are illustrated in (Magnani, 2010).

2124

ten subjectively dissimulated and paradoxically considered as the act of performing just, objective moral judgments and of persecuting moral targets. In sum, *de facto* the mobbers' coordinated narratives harm the target (as if she was just being *stoned* in a ritual killing), very often without an appreciable awareness of the violence performed.

This human linguistic behavior is clearly made intelligible when we analogously see it as echoing the anti-predatory behavior which "weaker" groups of animals (birds, for example) perform, for example through the use of suitable alarm calls and aggressive threats. Of course such behavior is mediated in humans through socially available ideologies (differently endowed with moral ideas) and cultural systems. Ideologies can be seen as fuzzy and ill-defined cultural mediators spreading what Thom calls pregnances that invest all those who put their faith in them and stabilize and reinforce the coalitions/groups: "[. . .] the follower who invokes them at every turn (and even out of turn) is demonstrating his allegiance to an ideology. After successful uses the ideological concepts are extended, stretched, even abused", so that their meaning slowly changes in imprecise (and "ambiguous", Thom says)[9] ways, as we have seen it happens in the application of the archetypical principles of mobbing behavior.

In this cognitive mechanism, a paroxysm of violence focuses on an arbitrary sacrificial victim and a unanimous antipathy would, mimetically, grow against him. The process leading to the ultimate bloody violence (which was, for example, widespread in ancient and barbarian societies) is mainly carried out in current social groups through linguistic communication. Following Girard (Girard, 1977, 1986) we can say that in the case of ancient social groups the extreme brutal elimination of the victim would reduce the appetite for violence that had possessed everyone just a moment before, leaving the group suddenly appeased and calm, thus achieving equilibrium in the related social organization (a sacrifice-oriented social organization may be repugnant to us but is no less "social" just because it is rudimentary violent).

This kind of archaic brutal behavior is still present in civilized human conduct in rich countries, almost always implicit and unconscious, for example in the racist and mobbing behavior. Let me reiterate that, given the fact that this kind of behavior is widespread and partially unconsciously performed, it is easy to understand how it can be implicitly "learned" in infancy and still implicitly "pre-wired" in an individual's cultural unconscious (in the form of ideology as well) we share with others as human beings. I strongly believe that the analysis of this archaic mechanism (and of other similar *moral/ideological/violent* mechanisms) might shed new light on what I call the basic equivalence between engagement in morality and engagement in violence since these engagements, amazingly enough, are almost always

hidden from the awareness of the human agents that are actually involved.

It is worth mentioning, in conclusion, the way Thom accounts for the social/moral phenomenon of scapegoating in terms of pregnances. "Mimetic desire", in which Girard roots the violent and aggressive behavior (and the scapegoat mechanism) of human beings (Girard, 1986) can be seen as the act of appropriating a desired object which imbues that object with a pregnance, "the same pregnance as that which is associated with the act by which 'satisfaction' is obtained" (Thom, 1988, p. 38). Of course this pregnance can be propagated by imitation through the mere sight of "superior" individuals[10] in which it is manifest: "In a sense, the pleasure derived from looking forward to a satisfaction can surpass that obtained from the satisfaction itself. This would have been able to seduce societies century after century (their pragmatic failure in real terms having allowed them to escape the indifference that goes with satiety as well as the ordeal of actual existence)" (*ibid.*).

Grounded in appropriate wired bases, "mimetic desire" is indeed a sophisticated template of behavior that can be picked up from various appropriate cultural systems, available over there, as part of the external cognitive niches built by many human collectives and gradually externalized over the centuries (and always transmitted through activities, explicit or implicit, of teaching and learning), as fruitful ways of favoring social control over coalitions. Indeed mimetic desire triggers envy and violence but at the same time the perpetrated violence causes a reduction in appetite for violence, leaving the group suddenly appeased and calm, thus achieving equilibrium in the related social organization through a *moral effect*, that is at the same time a *carrier of violence*, as I have illustrated.

Mimetic desire is related to envy (even if of course not all mimetic desire is envy, certainly all envy is mimetic desire): when we are attracted to something the others have but that we cannot acquire because others already possess it (for example because they are rival goods), we experience an offense which generates envy. In the perspective introduced by Girard envy is a mismanagement of desire and it is of capital importance for the moral life of both communities and individuals. As a reaction to offense, envy easily causes violent behavior. In this perspective we can add, according to Žižek, that "[. . .] the opposite of egotist self-love is not altruism, a concern for common good, but envy and resentment, which makes me act against my own interests. [. . .] The true evil, which is the death drive, involves self-sabotage" (Žižek, 2009, p. 76).

Conclusion

I have illustrated the so-called coalition enforcement hypothesis, which describes humans as self-domesticated animals engaged in a continuous activity of building morality, an activity that at the same time incorporates punishment policies,

---

[9]From this perspective the massive moral/violent exploitation of equivocal fallacies in ideological discussions, oratories, and speeches is obvious and clearly explainable.

[10]Or through the exposure to descriptions and narratives about them and their achievements.

where hypothetical (and abductive) cognition is central: indeed, the direct consequence of coalition enforcement is the basic role and hypothetical development of cultural heritage (morality and sense of guilt included). The long-lived and abstract human sense of guilt represents a psychological adaptation to abductively anticipate an appraisal of a moral situation to avoid becoming a target of coalitional enforcement. I have illustrated that natural language is a fundamental cognitive mediator of this enforcement activity in cognitive niches and the "military" nature of linguistic communication has been further explored, also taking advantage of some issue provided by Thom's catastrophe theory. This "military" nature of linguistic communication is intrinsically "moral" (protecting the group by obeying shared norms), and at the same time "violent" (for example, harming or mobbing others – members or not of the group – still to protecting the group itself). Finally, I have illustrated that the coalition enforcement hypothesis allows us to see altruism in a new light as related both to Simon's idea of docility as socializability and to the violent behavior needed to defend and enforce group coalitions.

References

Bardone, E., & Magnani, L. (2010). The appeal of gossiping fallacies and its eco-logical roots. *Pragmatics & Cognition*, *18*(2), 365–396.

Bingham, P. M. (1999). Human uniqueness: a general theory. *The Quarterly Review of Biology*, *74(2)*, 133–169.

Bingham, P. M. (2000). Human evolution and human history: a complete theory. *Evolutionary Anthropology*, *9(6)*, 248–257.

Boehm, C. (1999). *Hierarchy in the forest*. Cambridge, MA: Harvard University Press.

Byrne, R., & Whiten, A. (1988). *Machiavellian Intelligence*. Oxford: Oxford University Press.

Darwin, C. (1981). *The Descent of Man and Selection in Relation to Sex* [1871]. Princeton, NJ: Princeton University Press.

Dellarosa Cummins, D. (2000). How the social environment shaped the evolution of mind. *Synthese*, *122*, 3–28.

Dugatkin, L. A. (2008). *The Altruism Equation. Seven Scientists Search for the Origins of Goodness*. Princeton, NJ: Princeton University Press.

Dunbar, R. (1998). The social brain hypothesis. *Evolutionary Anthropology*, *6*, 178–190.

Dunbar, R. (2003). The social brain: mind, language, and society in evolutionary perspective. *Annual Review of Anthropology*, *32*, 163–181.

Girard, R. (1977). *Violence and the Sacred* [1972]. Baltimore, MD: Johns Hopkins University Press.

Girard, R. (1986). *The Scapegoat* [1982]. Baltimore. MD: Johns Hopkins University Press.

Lahiti, D. C., & Weinstein, B. S. (2005). The better angels of our nature: group stability and the evolution of moral tension. *Evolution and Human Behavior*, *2*, 47–63.

Magnani, L. (2007). *Morality in a Technological World. Knowledge as Duty*. Cambridge: Cambridge University Press.

Magnani, L. (2009). *Abductive Cognition. The Epistemological and Eco-Cognitive Dimensions of Hypothetical Reasoning*. Heidelberg/Berlin: Springer.

Magnani, L. (2010). Smart abducers as violent abducers: hypothetical cognition and military intelligence. In L. Magnani, W. Carnielli, & C. Pizzi (Eds.), *Model-Based Reasoning in Science and Technology. Abduction, Logic, and Computational Discovery* (pp. 51–82). Heidelberg/Berlin: Springer.

Mithen, S. (2007). Creation of pre-modern human minds: stone tool manufacture. In E. Margolis & S. Laurence (Eds.), *Creations of the mind. theories of artifacts and their representation* (pp. 289–311). Oxford University Press: Oxford.

Odling-Smee, F. J., Laland, K. N., & Feldman, M. W. (2003). *Niche Construction. The Neglected Process in Evolution*. Princeton, NJ: Princeton University Press.

Peirce, C. S. (1931-1958). *Collected Papers of Charles Sanders Peirce*. Cambridge, MA: Harvard University Press. (vols. 1-6, Hartshorne, C. and Weiss, P., eds.; vols. 7-8, Burks, A. W., ed.)

Pinker, S. (2003). Language as an adaptation to the cognitive niche. In M. H. Christiansen & S. Kirby (Eds.), *Language Evolution* (pp. 16–37). Oxford: Oxford University Press. Available from `http://www.isrl.uiuc.edu/ amag/langev/paper/ pinker03LanguageAs.html`

Rohwer, Y. (2007). Hierarchy maintenance, coalition formation, and the origin of altruistic punishment. *Philosophy of Science*, *74*, 802–812.

Rosas, A. (2008). Multilevel selection and human altruism. *Biology and Philosophy*, *23*, 205–215.

Simon, H. A. (1993). Altruism and economics. *American Economic Review*, *83(2)*, 157–161.

Thom, R. (1988). *Esquisse d'une sémiophysique*. Paris: InterEditions. (Translated by V. Meyer, *Semio Physics: a Sketch*, Addison Wesley, Redwood City, CA, 1990)

Whiten, A., & Byrne, R. (1988). Tactical deception in primates. *Behavioral and Brain Sciences*, *12*, 233–273.

Whiten, A., & Byrne, R. (1997). *Machiavellian Intelligence II: Evaluations and Extensions*. Cambridge: Cambridge University Press.

Wilson, D. S. (2002). Evolution, morality and human potential. In S. J. Scher & F. Rauscher (Eds.), *Evolutionary psychology. alternative approaches* (pp. 55–70). Boston/Dordrecht/New York/London: Kluwer Academic Publishers.

Wilson, D. S., Timmel, J. J., & Miller, R. R. (2004). Cognitive cooperation. When the going gets tough, think as a group. *Human Nature*, *15(3)*, 1–15.

Žižek, S. (2009). *Violence* [2008]. London: Profile Books.