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## SEMIOSIS IN HISTORY. THE EMERGENCE OF ALTER-CULTURE

### *ABSTRACT*

Following upon Merlin Donald's claim that human specificity emerges in history, and not exclusively in evolutionary time, it will be suggested that the diversified means of producing semiosis created by human beings account for the spread of empathy and altruism not only beyond the kin group, but to humankind in general. This amounts to treating other cultures as different from us, but still able to enter into communication with us (as an *Alter*), as opposed to treating these cultures as being part of nature, and thus only susceptible to being communicated about (as an *Alius*). Starting out from the theory of bio-cultural evolution defended by Peter J. Richerson and Robert Boyd, as well as from the multi-level selection theory of Elliott Sober and David Sloan Wilson, we try to lay bare the way in which semiotic structures play a role for transforming cultural evolution, contrary to biological evolution, into human history. We inquire into what makes the existence of *Alter-culture* possible, if, as Sober and Wilson have claimed, armed with game theory, an altruistic society (an *Ego-culture* in our terms), is only possible in opposition to another group in relation to which group egoism rules (that is, in our terms, an *Alius-culture*). We will follow Michael Tomasello in arguing for the primacy of games of cooperation, rather than competition, while adding an historical dimension, which serves to explain how such cooperation can be extended beyond the primary group (our *Ego-culture*). However, we will insist on the importance of multiple semiotic resources for the boot-strapping of empathy and altruism, as well as on the genesis of this process in cultural encounters, as reflected in the spirit of the Enlightenment.

**Keywords:** Cognition, semiotics, empathy, altruism, bio-cultural co-evolution.

*As man advances in civilisation, and small tribes are united into larger communities, the simplest reason would tell each individual that he ought to extend his social instincts and sympathies to all the members of the nation, though personally unknown to him. This point being once reached, there is only an artificial barrier to prevent his sympathies extending to the men of all nations and races. If, indeed, such men sep-*

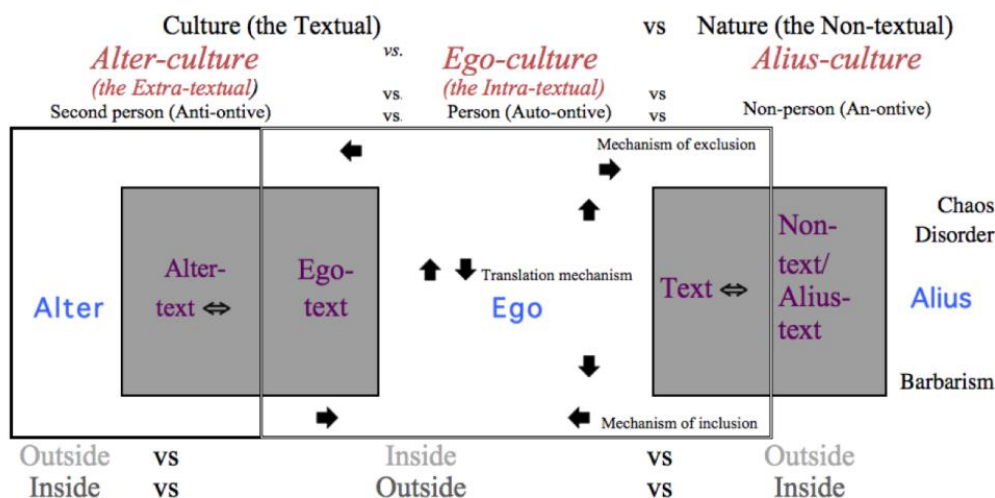
*arated from him by great differences in appearance and habits, experience unfortunately shows us how long it is, before we look at them as our fellow-creatures.*

Charles Darwin (1871[1896], 122)

Cognitive semiotics has been described as an attempt to draw together the age-old research tradition of semiotics, which dates back at least as far as Greek Antiquity, and which is concerned with questions of meaning, and the much-more recent research tradition called cognitive science, which can be said to be involved with consciousness (whether to deny it or to proclaim it), emphasizing not only such disciplines which are parts of them both, such as linguistics and philosophy, but those domains which are complementary (See Sonesson 2009a, b). One thing which cognitive science certainly can bring to semiotics is the missing diachronic aspect, which in the former, and particularly in contemporary linguistics and biology, has been identified mostly with the evolutionary perspective, sometimes also including the dimension of child development. On the other hand, the semiotic tradition has a speciality to offer which is geared to the study of cultures and the interrelations between them, as they are manifested in the models that members of cultures make of them: the semiotics of culture. If history is the continuation of evolution by other means, then cultural semiotics may help us understand how cultural evolution is different from the biological one (see Sonesson 2016b, c).

## **1. FROM SYNCHRONY TO DIACHRONY IN THE SEMIOTICS OF CULTURE**

In the semiotics of culture, as first conceived by the Moscow-Tartu school, culture is opposed to nature as order is to disorder, and as is civilization to barbarism. As I have pointed out elsewhere, this can only be a model of culture, to the extent that we take it to be formulated by the members of the very culture, and if we presume it to be egocentric, in the literal sense of the term: that what is culture and non-culture is decided by whom is using the word (except in exceptional cases, which I have termed the “inverted model”: see Sonesson 2000; 2002; 2003; 2007a; 2012; 2013; 2016a, b; Dunér 2016). As I later was to discover, Edmund Husserl, in his posthumous writings, made a similar distinction, dividing the *Lebenswelt* (Lifeworld), the world taken for granted, into *Heimwelt* (Homeworld) and *Fremdwelt* (Alienworld), a couple of terms which have the advantage of making the egocentricity requirements explicit (See Steinbeck 1995; Welton 2000; Sonesson 2012).



**Figure 1.** The “extended model” of cultural semiotics as proposed by Sonesson 2003

### 1.1. Empathy for the Other

As soon I had encountered these models of the models that people make of their own culture, as it relates to other (non-)cultures, I could not help wondering whether there was not also another way of relating to those which are not members of the own culture than as representing chaos and barbarism. If the own culture was defined by *Ego*, the first person of grammar, then the other culture, I mused, may be defined either by the third person of grammar, an *Alius*, or by the second person, an *Alter* (Sonesson, 2003). I called the model opposing only culture to its other, the *canonical model*, and I used the term *extended model* to talk about the tripartite organisation. As my then-time student, Anna Cabak Rédei (2007) suggested in her doctoral dissertation, it would be convenient to call the different parts of these models *Ego-culture*, *Alius-culture*, and *Alter-culture*, respectively (See Sonesson 2012). It could be said that *Alter* is the other as conceived by Peirce, in his image of the tuistic age, that is, the other of conversation, and of collaboration generally, whereas *Alius* is the Bakhtinean other, the one which is seen from the outside by the author or by any other observer.

According to this analysis, Christopher Columbus is a good example of somebody conceiving the American continent as instantiating an *Alius*, since he treated the people he encountered on a par with gold, species, and other material resources, whereas Hernán Cortés took the attitude you have to an *Alter*, since he addressed the natives as human beings, even if only to deceive them better. Cortés immediately finds interpreters, and inquiries into the customs of the Indians. He makes use of the things he learns about the other culture. Presenting himself as Quetzalcoatl, he lets himself be

translated into an Aztec “text” (see Sonesson, 2000). If *Alter* is thus the other as grasped by empathy, the latter has to be understood, as it is by some authors, as the ability to conceive and adapt to the position of the other, not, necessarily, as other authors would have it, to identify with him. Even if we adopt the distinction between cognitive and emotive empathy (see Preston, de Waal, 2002), recognizing the feelings of the other is not the same as sharing them.

It is important to note that empathy, in the general sense of being able—or trying—to understand the other (see Stueber, 2006) is not to be identified with altruism, which plays an important part in recent discussions of evolutionary theory (See Sober, Wilson, 1998; Dugatkin, 2006; Decety, Ickes, eds. 2009; Harman, 2011). Cortés may be more empathic than Columbus, but he is not more altruistic. He clearly adopts the hermeneutic task of understanding with the aim of better to vanquish the Aztecs. Empathy in the sense of the ability to understand is possibly a prerequisite for altruism. On the other hand, it is of course possible that empathy, in the sense of feeling the same feelings as the other, can help us gaining an understanding of these feelings. When Daniel Batson (2011) talks about “empathy induced altruism,” using the term empathy in the sense of feeling the feelings of the other, he may be taken to suggest something of the kind, or, more probably, he sees the whole process, from the initiation of the goal and its acting out in reality, as a process occurring on the level of emotion. However, I shall here use “empathy” to mean, as in hermeneutics, the ability or will to understand/interpret the other and/or his works. Logically, empathy, in this sense, is no doubt a requisite for altruism, but, in an evolutionary sense, the opposite may be the case.

Elliott Sober, David Sloan Wilson (1998, 6f, 197ff) have introduced a distinction between behavioural and psychological altruism. In this view, psychological altruism is what we would normally understand by this term: to act out of a (more or less) non-egoistic motive. Behavioural altruism is to act as we would expect an altruist to act, without there necessarily being any psychology behind it. As we shall see, there has long been a tendency in evolutionary theory to suppose that while behavioural altruism is real, psychological altruism is not. This is not necessarily because of taking a behaviourist stance (or taking the position of radical enactionists), but because other motives may exist. One such motive (though normally thought to be unconscious) is the interest of the subject in having his genes survive, which would make altruism into a family affair. Another one is that the subject is simply trying to get rid of the queasy feeling of experiencing the suffering of the other. However, Batson (2011) has shown—using rather contrived experimental set-ups, to be sure—that altruism, at least nowadays, is a real motive, because those who had the possibility of opting out from experiencing the suffering of the other, still tried to help. However, perhaps the sacrifices

demand of Batson's subject are not comparable to those envisioned by the students of evolutionary history. And perhaps it is simply a misunderstanding to try to derive our sense of morality from altruism, as Nicolas Baumard (2010) has claimed, going as far as suggesting that "the moral sense," as he terms it, following in the steps of English 18<sup>th</sup> century philosophers, is really an innate module. Nevertheless, this does not seem to be compatible with evolutionary history, as we will suggest in the following.

The *canonical model* of cultural semiotics can perhaps be explained by the model of altruism proposed by Sober and Wilson (1998). The *extended model* may have originated in bio-cultural evolution as suggested by Peter Richerson and Robert Boyd (2005). Before going on to explore this hypothesis, it may be worthwhile to consider two other possible points of view. According to the first, both models have always coexisted in human history. This can probably not be denied, but it might still be true that the *extended model* has become increasingly accessible, and indeed prevalent, in evolutionary history. The other alternative amounts to the claim that, to the contrary, human beings first, in hunter-gather time, lived in a world more like that described by the *extended model*, but then, with sedentarity and agriculture, emerged into a new world characterized by the *canonical model*, as it would be most clearly expressed by a perpetual state of war. In spite of the popularity of the latter claim, there is nevertheless solid evidence against it, from both ethnology and archaeology. Not only does Jarred Diamond (2012: 79 ff.) maintain, on the basis of his own experience in New Guinea, that war is in fact endemic in traditional society, but, in addition to other ethnographic evidence, there are ample sources of archaeological proof of this finding (See, notably Keeley, 1996; Guilaine, Zammit, 2001; Marandet (ed.), 2011; Patou-Mathis, 2013). Indeed, chimpanzees follow the *canonical model* in this respect, once we take into account that their encounters with other groups happen rather seldom (see Boehm, 2001; 2012).

## 1.2. Inclusive Fitness and Beyond

Suppose then that, in evolutionary history, we have gone from the *canonical model* (to which we sometimes return) to the *extended model*, which tends to generalize the *Alter* mode, resulting from bio-cultural evolution—then it may be true now, although it has not always been true, that we are "born and bred" (in Tomasello's 2009 terms) into altruism. That is, if there is something which can be called bio-cultural evolution, as suggested by Richerson and Boyd (2005), and if they are right in claiming that the biological part of the process can be much more rapid than has customarily been presumed, what was once bred into us can now, at least in part, be something with which we are born. And if we follow Merlin Donald's (1991; 2001) line of argument, this part of human specificity may even have devel-

oped in the phase of cultural evolution which we are accustomed to call history.

According to “multilevel selection theory,” as defended by Sober and Wilson (1998), the unit of selection in biological evolution can be the gene, the organism, or the group. Stephen Jay Gould (2002, 21) goes even further, suggesting that there are “several legitimate levels of Darwinian individuality (genes, cell-lineages, organisms, demes, species, and clades)”. The most controversial part of these suggestions, however, is the idea that the unit of selection can be the group or, in Gould’s terms, the deme, usually defined as the local populations of organisms of one species that actively interbreed with one another (see Borrello, 2012 [2010]). It won’t be necessary to discuss in the following whether the subject of evolution is the gene, the organism, the group, or something else (see Sonesson, 2016b, c), since cultural evolution, at least in the last instance, can hardly be anything else than group evolution. We will, however, have to dwell on a very particular group, the family, in the extended sense of the term, the survival of which is usually formulated in terms of preserving the common genes.

William Hamilton coined the term “inclusive fitness” (later called “kin selection”) for the idea of egoism being extended to all individuals sharing (more or less) the same genes. According to what the textbooks (e.g. Barrett, Dunbar, Lycett, 2002; Rossano, 2003; Buss, 2012) call *Hamilton’s rule*, altruism can evolve if the cost to the self is outweighed by the benefit to the recipient, multiplied by the probability that the recipient carries the same gene. It thus explains altruism as kin-extended egoism. In this sense, Hamilton thinks it is worth dying to save three brothers, five nephews, or nine first cousins (as J.B.S. Haldane said before him), who have an unequal share of the same genes as the Ego. Textbooks in evolutionary psychology never recognize the fact that Hamilton later came to the conclusion that genetic relatedness made no difference – as long as the others could be recognized as altruists. As was shown mathematically by George Price, and later recognized by Hamilton (1975, 337) himself, genetic relatedness is not necessary, for, as long as we are convinced that the others are also altruists, it is worthwhile to be an altruist: “[K]inship should be considered just one way of getting positive regression of genotype in the recipient, and [...] it is this positive regression that is vitally necessary for altruism. Thus, the inclusive-fitness concept is more general than ‘kin selection’” (Also see Segerstråle, 2000; Dugatkin, 2006; Harman, 2011).

Sober and Wilson (1998), who mention Hamilton’s change of heart, claim that in a group of altruists and egoists, the altruists give one fitness point to themselves and to all the others; and at the same time, they lose two fitness points, and do not receive any from the egoists; and in this sense, egoists are more fit than altruists. This poses the question how altruists can evolve: being less fit, they should normally disappear rapidly from the struggle of the fittest. Sober and Wilson (1998) go on to argue, however, that, when

pitted against a group of egoists, the group of altruists will achieve the highest fitness points.

This could be seen as the evolutionary explanation of the canonical model of Cultural semiotics. If so, the empathy within the group only comes at the prize of a lack of empathy in relation to other groups. In my earlier work in cultural semiotics (See Sonesson, 2000; 2002; 2003; 2007a; 2012; 2013; 2016a, b), I have taken for granted that Ego-culture did not have to be forever opposed to Alius-culture. Alter-culture, in this sense, is an extension of Ego-culture, with some restrictions, to some other cultures. But, if group selection theory is right, at least as conceived by Sober and Wilson (1998), this can never happen, because altruism and empathy only make sense from an evolutionary point of view in opposition to other groups. It is possible that genetic-cultural co-evolution may overcome this obstacle, as it has probably done with many others, but it is not very clear how this can be done.

David Sloan Wilson (2002), who collaborated with Elliott Sober in the book referred to above, has made a very forceful argument for Culture being Ego-culture (although not in those terms): Using the privileged example of religion to show the development of social groups, Wilson identifies his theory with that of Durkheim. Religion, to Durkheim, it may be remembered, is the veneration of society by itself (For a recent overview, see Juan 2015). As Wilson remarks, this explains the horizontal relation, between members of the same religion (and/or society), but leaves the vertical dimension (to God) more or less unexplained. Fortunately, from our point of view, which is that of evolutionary cultural semiotics, the horizontal relation is the essential one. Unlike Sober and Wilson (1998), Wilson (2002), and more explicitly Wilson (1997), is really out to explain the existence of society. It will be noted, however, that a social group in this sense cannot simply be identified with the deme, because social groups, and in particular societies and/or cultures, in the sense of Durkheim, cannot be reduced to locally (even potentially) interbreeding organisms, precisely because they are supposed to be “superorganic”, i.e. having an existence of some sort above the levels of the individuals making it up.

## **2. FACTORS IN NATURAL AND CULTURAL EVOLUTION**

What makes human beings, and their way of thinking, unique in the biosphere of the earth, is not just the biological-genetic evolution of human cognitive capacities, but also the interaction in historical time with the environment, the socio-cultural Lifeworld, and particularly human semiotic skills, i.e. the ability to learn from other thinking beings, and to transfer experiences, knowledge, meaning, and views to new generations. Traditionally, history has been the singular telling of stories of our particular spatio-

temporal existence; and the theory of evolution has consisted in studying the specific way human biology has evolved. According to the evolutionary scheme proposed by Merlin Donald (1991; 2001; 2004; 2010), human specificity proceeds from biological to cultural evolution, from the episodic over the mimetic and the mythic stage to that of theory, that is, it transcends (natural) evolution into history. Peter Richerson and Robert Boyd (2005) systematically work out the parallels between natural and cultural evolution, but they fail to reckon with the way in which cultural evolution is necessarily different from biological evolution: in being played out in a world in which humanity has already created the semiotic structures for the conservation of memory resulting from mimetic and mythic stages, and while they are in the process of producing theoretic structures.

### 2.1. Cultural Selection as Natural Selection

Although it is the factor last mentioned by Richerson and Boyd (2005) when suggesting parallels between natural and cultural evolution, natural selection certainly plays a particular part in their proposal, somewhat as the last instance of determination, as was more explicitly pointed out by Luigi Luca Cavalli-Sforza (2001: 178). Actually, the idea that Darwinism is really a general theory concerning the mechanism rendering change possible, in culture as well as nature, was first suggested by David L. Hull (1988: 397ff), in a book involved with cultural evolution and, in fact, more particularly, with the changes in a particular domain of culture, the history of the (biological) sciences. Later on, Stephen Jay Gould (2002: 59) expressed his contention that the “one long argument” which Darwin claims to be making all through his seminal book is “an attempt to establish a methodological approach and intellectual foundation for rigorous analysis in historical science” overall, although biological evolution happens to be his example. Basically, this methodological principle could be formulated as the requirement for their being first variation and then selection among the variants.<sup>1</sup>

The essential contribution of Richerson and Boyd, however, is to suggest that, along with a mechanism similar to natural selection, culture also depends on several other impacting factors, all similar to what we find in natural evolution. The cultural evolutionary forces discussed by Richerson and Boyd (2005: 69 ff.) are as follows: *random forces*; *decision-making forces*; *biased transmission*; and *natural selection*. *Random forces* may be distinguished into two subcategories: first, *cultural mutation*, where the effects are due to random individual-level processes, such as misremembering an item of culture. From a more classical, sociological or hermeneutic, point of

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<sup>1</sup> All these authors at the same time distance themselves from the notion of “meme,” as a unit of cultural selection, comparable to the gene as a unit of natural selection, as first defined by Dawkins (1999 [1982]). For a discussion of good and bad reasons for maintaining this distinction, also those of Sperber (1996) and Testart (2012), see Sonesson (2016b, d; in press).



view, this seems to be the stuff of which rumours and, more widely, traditions, are made. Second, there is *cultural drift*, which is the effect caused by statistical anomalies in small populations. For example, in “simple societies,” as Richerson and Boyd say (meaning, I take it, societies consisting of few members and/or societies without a state, which are often not so simple in other respects) some skills, such as boat building, may be practiced only by a few specialists. If all the specialists in a particular generation happen, by chance, to die young or to have personalities that discourage apprentices, boat building will die out.

Next, there are *decision-making forces*, which are the kind of impetus for change that is more familiar to us from ordinary history writing. Richerson and Boyd describe them all as guided variation and as non-random changes in cultural variants occasioned by individuals and subsequently transmitted. This force is said to result from transformations during social learning, or the learning, invention, or adaptive modification of cultural variants. Biased transmission is of three kinds. There is *content-based (or direct) bias*, in the case of which individuals are more likely to learn or remember some cultural variants based on their content. Content-based bias can result from calculation of costs and benefits associated with alternative variants, or because the structure of cognition makes some variants easier to learn or remember.

The second kind of biased transmission is the *frequency-based bias*, which Richerson and Boyd describe as the use of the commonness or rarity of a cultural variant as a basis for choice. For example, the most advantageous variant is often likely to be the commonest. If so, a conformity bias is an easy way to acquire the correct variant. This seems to correspond to factors that have been adduced in social psychology, and perhaps especially mass psychology (Le Bon, Tarde, etc.; see Moscovici 1985). There is also *model-based bias*, which Richerson and Boyd describe as the choice of traits based on the observable attributes of the individuals who exhibit the traits. In this view, plausible model-based biases include a predisposition to imitate successful or prestigious individuals, as well as to imitate individuals similar to oneself. This factor seems to overlap with the second one, and again it is reminiscent, in particular, of mass psychology.

So far, we have suggested that the factors to which Richerson and Boyd here give metaphorical names taken over from natural evolution have in fact already been taken into account by the human and social societies. This does not mean that the work accomplished by our authors has been in vain. First of all, it is worthwhile to bring together in one epistemology factors which have been discussed more or less independently in different parts of the human and social sciences, as well as in biology, thus giving us the necessary framework for estimating their relative importance. Second, it makes sense to establish that all diachrony consists of the production of variants and a process of selection applied to these variants. Third, such an epistemological framework may offer us the necessary background for

determining what really makes the difference between natural and cultural evolution.

As a case in point, we will here consider the single factor termed *cultural drift* by Richerson and Boyd, which is the effect caused by statistical anomalies in small populations, exemplified by the case in which a given tribe has only a small number of specialists on boat-building, and these all happen, by chance, to die young or to have personalities that discourage apprentices, causing boat building to die out. This may actually happen also in not so simple societies as our own: thus, following Thomas Kuhn's famous suggestion about other scientific domains, structuralist linguistics seems to have died out that way within the tribe known as linguists. Indeed, we know that, during Classical time, the Mayas constructed the pyramids in Yucatán, Chiapas, and Guatemala, but, according to all ethnological testimonies, their latter-day descendants believe they were constructed by some supernatural stripe of dwarfs. While this may happen, nonetheless, it does not have to happen. And the same argument applies to all the other factors proposed by Richerson and Boyd.<sup>2</sup>

This is because, once we have culture, matters become more intricate: we still have all the books of the structuralists, and we can always start glossing them over again. But, even in "simple societies", it may not be so easy to get rid of boat building altogether, if the terminology is preserved in the language. It might even be said that boat-building cannot disappear as long as boats are around. But, the existence of boats may not be enough to tell you how to make them – and the same goes for boat-building terminology, which is not necessarily sufficient to mirror tacit knowledge. There is nothing very obvious to the process of reverse engineering.

Whether it is a question of boat-building, pyramid-building, or structuralist linguistics, nevertheless, having access to a written account (and even a series of pictures), and knowing how to read it, makes all the difference. Eva Jablonka and Marion Lamb (2005) have pointed out that there are four kinds of inheritance system playing a role in evolution: in addition to genetic inheritance, there is epigenetic inheritance (i.e. situational regulation of gene expression as conveyed, notably, by means of methylation); and there is also information transmitted by means of behaviour, as well as by signs. It might be added that, while all are characterized by variation followed by selection, only in the case of the latter two does the non-chosen variants, to different degrees, *remain available for later inspection, and thus for renewed selection*. This is why those two are the regulators of cultural evolution.

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<sup>2</sup> For the details of this argument, see Sonesson (2016b, c, d; in press).

## 2.2. Some Extensions of Extended Memory

Merlin Donald (1991; 2001; 2010) identifies four stages of the evolutionary process by means of which human beings have become different from other animals, identifying them with different kinds of memory (see Figure 2). *Episodic memory*, the memory for single situated happenings, is something which human beings share with many other animals.<sup>3</sup> *Mimetic memory*, or perhaps rather the peculiarly form that mimetic memory takes in human beings, is restricted to human beings and close predecessors, such as *Homo ergaster* and/or *Homo erectus*. As I have pointed out elsewhere, many remarkable things seem to happen within the stage which Donald calls the mimetic stage: there is tool use, skill, imitation, gesture, and pantomime, some of which involve sign use and others not (Cf. Sonesson, 2007b, c; 2016b).

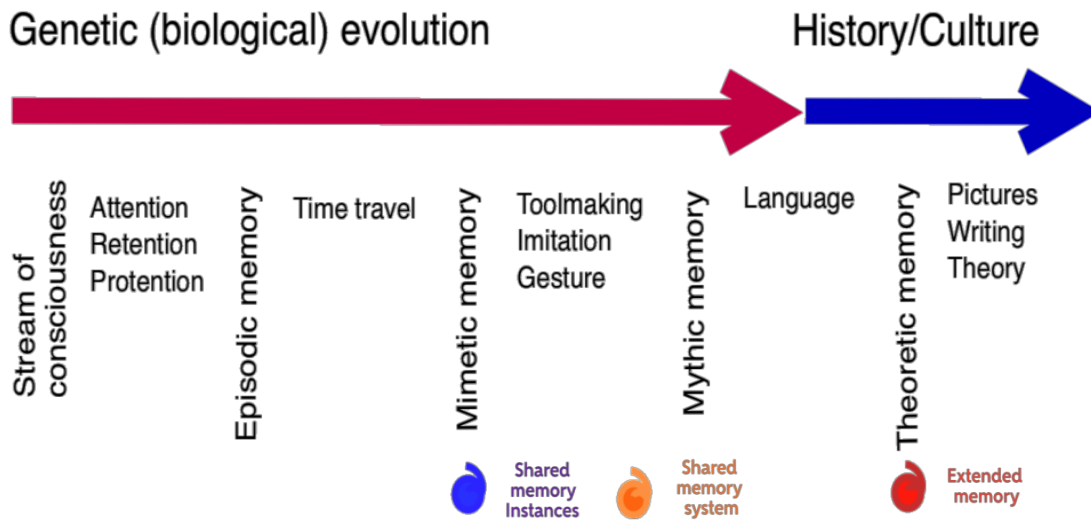
It should be noted that, as long as *mimesis* only comprehends tool use, which is a possible first phase, it is, equally to *episodic memory*, an individual concern. It is certainly sedimented as a behaviour pattern into the body, but only from the point of view of the individual possessing that particular body. This remains true of skill, as long as it is the skill for using tools or even for using the members of the own body in an instrumental way. Imitation and gesture, however, necessarily involve a community of memory users. That is, while *episodes* may be savoured in solitude, and the early stages of *mimetic memory* may be so handled as well, it takes a community, or at least two subjects, to make use of imitation and gesture. If we think of pictures, not as static structures as we are now wont to consider them, but as the sedimented patterns by means of which pictures are produced in the sand, or on the skin, or on any other surface unable to conserve the pattern for long (as the air, in the limiting-case of gesture), pictures might pertain to this category, and not to the fourth one, as Donald suggests; but we have no clear historical sources for determining which one of these assignments is correct.

This part of the mimetic stage would already involve a kind of “extended” or “distributed cognition” in the sense of contemporary cognitive science (See Hutchins, 1995; Clark, Chalmers, 1998). Indeed, Gavriel Salomon (1997) has reintroduced the distinction between the kind of thinking done by people in conjunction and partnership with others, and that which occurs with the help of culturally provided tools and implements, such a calculators or grocery lists. The first kind, which he calls “shared cognition,” is exempli-

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<sup>3</sup> If we take episodic memory to involve what Williams James called the stream of consciousness, characterised, in Husserl’s term, by protentions and retentions, there should also be a *pre-episodic memory*, to account, for instance, for the world of the tick, and then it does not necessary involve time-travelling, postulated by Endel Tulving, for which a *post-episodic memory* may be necessary (see Sonesson, 2015). None of these precisions needs to concern us here.

fied by conversation, where there is a constant change of cognition based on the other person's responses. The second kind he calls "off-loading," but I will reserve for it the term "extended memory."



**Figure 2.** Donald's different types of memory as reinterpreted in Sonesson (2007b, c; 2016a, b) and developed in the text.

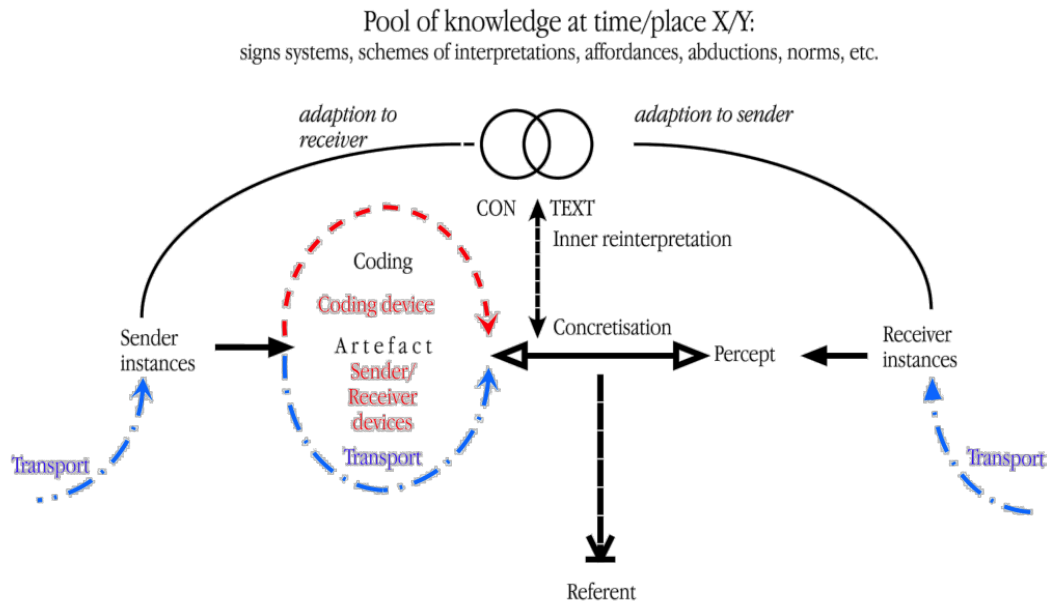
One would do well to distinguish also a third kind, epitomized by the system of language, the system of arithmetic, the system of writing, and so on, which make the second kind of objects possible. Indeed, gesture, as soon as it becomes part of a system, such as in the case of signed languages, no longer is purely mimetic but already a memoric system. It would thus correspond to Donald's next stage, *mythic memory*, which for Donald is represented by language. It is called *mythic memory*, however, because it involves the construction of narratives, no doubt initially used to recount myths, and thought by Donald to be the reason why language evolved.

This brings us to the fourth stage, called *theoretic memory* by Donald, which supposes the existence of a physical realisation independent of the bodies of the subjects (except, of course, when the body is used as a surface for conserving meaning, but then of course in a relatively transient way). Donald (2010) calls such bits of memory (in contrast to "engrams") "exograms." Again, the name given to this stage by Donald epitomizes one of its possible realisations, that is (scientific) theories, but the stage also comprises writing and pictures (if they are not sand paintings, etc., on which see Sonesson 2007a, b). Such as theory, on a very general level, may be geometry, but also the general rules of land-surveying, as opposed to the simple bodily praxis of which both are "formalizations," according to Husserl's (1954, 365–217) observations in the "Origin of geometry"-paper. Such a system of rules, conveyed by means of the kind of artefact we call a book, is

comparable to the system of the third stage, although now more enduringly embodied. However, a piece of writing, and even a picture (book), is more comparable to the narrative structure type of the third stage. This is of course “off-loading,” or “extended memory,” in the proper sense of the term.

Unlike natural evolution, cultural evolution is all the time also an accumulation of meaning, not only of information, in other words, it is memory experienced. Unlike genetic inheritance mechanisms, cultural evolution brings forth a kind of memory record that always remain available for later inspection, and thus for renewed selection (See section 2.1). The evolutionary interpretation of cultural semiotics therefore would seem to re-establish a version of the classical conception of human speciality, as conceived first by the Enlightenment philosophers (including Herder and Humboldt) and, at the beginning of the 20th century, by such thinkers as Husserl, Dilthey, and Cassirer. In contemporary terms, this is semiosis: the accumulation of meaning in memory (see Sonesson, 2016d). This allows for a kind of meta-position in relation to cultures, which may be at the origin of empathy and, eventually, of altruism. Of course, at a primary stage, the first layer of memory was probably not filled up with what we know as science, but with something more akin to ritual, ethnics, religion, emotion. This may account for the extension of *Alter* outside *Ego-culture*.

Instead of talking about the accumulation of meaning, we will follow Husserl in calling the process *sedimentation*. In posthumous texts, Husserl distinguished between the genetic and generative dimensions of experience (See Welton, 2000; Steinbock, 1995). Every object in our experience has a *genetic* dimension: it results from the layering, or sedimentation, of the different acts that connects it with its origin, which give it its validity, in the way in which geometry, as Husserl's (1954, 378ff) observes, once developed out of the praxis of land-surveying. There is also the further dimension of *generativity*, which pertains to all objects, and which results from the layering, or sedimentation, of the different acts in which they have become known, which may be acts of perception, memory, anticipation, imagination, and so on. The term generativity is meant to evoke the idea of generations following each other, as well as the trajectory accomplished by each individual from being born to dying. Taking all this into account, the return to the origin cannot amount to a reduction of geometry to land-surveying, in which case not only non-Euclidean geometry would be impossible, but all the “discoveries” of mathematics after the formalization of the practice of land-surveying. As Husserl (1954, 371) goes on to mention, though he fails to bring it into focus, geometry, as well as any other system of ideal structures, appears to have an existence beyond all the practice which is sedimented into them, already because they are present outside of time and space—or rather, in all times and spaces (after the foundational moment, or more precisely, the sequence of foundational moments: see Sonesson, 2015b).



**Figure 3.** Model of communication integrating the Prague and the Tartu model, as proposed by Sonesson 1999. Dashed lines indicate processes which are not obligatory for this to constitute communication.

### 3. COMMUNICATION AS COLLABORATION

As Michael Tomasello (2008) observes, communication is a kind of collaboration. Unlike other species, Tomasello (2009, 1f) notes, human beings are “born and bred to help”. Other primates, it turns out, are able to cooperate when this is to their mutual benefit, and even, to some extent, to share food. But what they cannot do is to share information. This is why Tomasello talks about “the cooperation model of human communication”. Nevertheless, Tomasello does not have much to say about such a model of communication. In other papers, however, I have tried to delineate precisely such a model, taking my inspiration from the Prague school, which itself builds on Husserlean phenomenology, integrating it into social space. According to this model, all kinds of communication consist in presenting an artefact to another subject and assigning him or her the task of transforming it by means of concretisation into a percept, starting out from a pool of knowledge which is only shared in part (see Sonesson, 1999 and Fig. 3).

#### 3.1. In-Between the Prison House and the Stag Hunt

Like the work of Richerson and Boyd, that of Sober and Wilson is based on theoretical models derived from game theory, which, in spite of its name, is the favoured paradigm for understanding the functioning of capitalist society, and just marginally some games. More specifically, it is based on

zero-sum games, where it is only possible to win to the exact extent that someone else loses. In fact, they are all involved with variations on a slightly more complex case, the so-called Prisoner's Dilemma, in which, out of two prisoners, the one who incriminates the other will receive a lighter sentence, unless the other also incriminates him, in which case both will receive harsh sentences, whereas none of them will be imprisoned, if both keep silent (see Nowak, Highfield, 2011, 1–17).<sup>4</sup> Without referring to game theory, Sterelny and Griffiths (1999, 151 ff.) early on in their book consider the claim that groups may be units of selection, generally accepting the arguments, but stating that the same facts may be alternatively explained by thinking of any given individual on the background of his/her relations to another individual, or, more precisely, taking the population structure to be part of the environment in which selection takes place (See Sterelny, Griffiths, 1999, 166 ff.).

Nowak and Highfield (2011, 21–114, 270 ff.), on the other hand, have tried to extend the metaphor of the Prisoner's dilemma, modifying some of the features that render it improbable as a model of society. One obvious problem with the Prisoner's dilemma is that both subjects involved are isolated, not knowing about the decisions of the other, which is a rather unrealistic condition in society. First, knowledge of the decisions of the other may be added ("direct reciprocity"). Second, there may be an indirect reciprocity, resulting from the reputation (given language or some other sufficiently complex semiotic system) of the other conveyed to other members of society. Finally, there is also the simple effect of being neighbours. According to Nowak and Highfield (2011), this is sufficient for collaboration to emerge. One may have doubt about this last point: as we saw above, if chimpanzees are less war-mongers than early human beings, it precisely seems because their living space is so extended, that they rarely have any neighbours to count with (see Boehm, 2001; 2012). On the other hand, urbanism certainly seems to have brought about something of the kind in human beings (See Sonesson, Sandin, 2016). It will be noted that the other two factors adduced both depend on communication, that is, on semiosis.

Without any stake in game theory, Michael Tomasello (2008; 2009) has repeatedly insisted on the importance of cooperation to the evolution and development of human beings. On the basis of experimental evidence, Tomasello (2008, 177 f.) maintains that cooperation is a human speciality, even when compared to other primates. When cooperation has a concrete goal, chimpanzees synchronize their behaviour skilfully; however, when the social game has to be performed for its own sake (e.g. using a trampoline to bounce up a ball together), they show no interest, unlike 14–24 months old

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<sup>4</sup> Curiously, Daniel Batson (2011) showed experimentally that altruism can be a real motive, even in the classical game theory case of the prisoner's dilemma.

children. In Brian Bertram's (1982) terms, this would seem to mean that other apes are capable of mutualism (when both individuals gain from the collaboration) and reciprocal altruism (where the one who helps is repaid at some later time), but not of helping for helping's sake (cf. Dunbar, in Wilson, Keil, 1999, 201 f.; Nowak, Highfield, 2011, 21 ff.).

In a later book, Tomasello (2009) claims that chimpanzees are as advanced as we are in the business of helping, but not as far as informing and sharing are concerned: that is, they would assist another ape in obtaining an object, but not in conveying the information on how to obtain it to him. In this same publication, and in his most recent one, Tomasello (2009; 2014) goes on to claim that it is precisely in mutualism that the big difference between human beings and nonhuman apes consists. In the experimental literature, he contrasts the case of apes being able to accomplish a joint endeavour pulling in a basket containing food, but only when the parts of the food pertaining to each of them is clearly divided beforehand, whereas children can accomplish the same feat, even when the food subsequently has to be divided. At a more ethological level, Tomasello (2009; 2014) claims there are no real "shared cooperative activities" among nonhuman apes, whose hunting activities really are a case of other apes following up on the initiative of the first one, which is seen from the fact that the ape which ends up with the prey only grudgingly lets the others share in the booty. Human beings, on the other hand, Tomasello maintains, systematically engaged in such shared cooperative activities, as epitomized, from the start, by the stag hunt, and this is the beginning of collaboration which, by means of joint and later collective intentionality, leads to society and culture.

Whether Tomasello is unfair to our fellow apes or not is not the essential issue at present: it is that game theory must suppose all altruism to be reducible to mutualism and reciprocal altruism (however much Sober and Wilson appear to say something very different in the parts not expressed in game theoretical terms of their book). Interestingly, Tomasello (2014) suggests that, when turning to game theory, we should really go shopping for models of collaboration, not competition. Still, not even mutualism may be sufficient to explain the daily on-going cooperation that we call society and culture. It is a fact that human beings live in societies, which presuppose large-scale cooperation, increasingly between non-kin (especially in city life; see Sonesson, Sandin, 2016), and without specific offers of reciprocity and/or mutualism. This may, most of the time, be low-level collaboration, but collaboration still it is, and the possibility of it has to be explained.

In the end, it all boils down to an opposition familiar from the history of ideas. Tomasello (2009, 3) points out that this discussion partakes in "one of the great debates in Western civilisation [...] whether humans are born cooperative and helpful and society later corrupts them (e.g. Rousseau), or whether they are born selfish and unhelpful and society teaches them better



(e.g. Hobbes),” and he professes to “defend a thesis that mainly sides with Rousseau’s take of things.”<sup>5</sup> Even accepting something of Rousseau’s vision, however, Tomasello still thinks we also need to be bred into collaboration. Nicolas Baumard (2010, 27ff), who claims we are born into morality (thanks to a “module”) stills observes that the application of the system depends on whom we recognize as human beings.<sup>6</sup>

Tomasello (2009, 99 f.) in the ends arrives at the same conundrum as Sober and Wilson: he concludes that “the best way to motivate people to collaborate and to think like a group is to identify an enemy and charge that ‘they’ threaten us.” In other words, in order to breed individuals into cooperation, the obvious way is to organize them into a group dedicated to an (often deadly) competition with other groups, that is, as an *Ego-culture* opposed to an *Alius-culture*. And this means that, in spite of Tomasello’s claim, competition originally reigns supreme over cooperation. Another alternative, however, could be to admit an original Hobbesian war, which is precariously suspended by a collaborative bond within culture, at the price of Hobbesian war still raging outside of the own culture (see Boehm, 2001; 2012).

### 3.2. History as the Progressive Semiotization of Humankind

If we suppose Sober and Wilson (1998) to be right about the rules of group selection, *Alter-culture* (or perhaps even *Ego-culture*) would reign supreme within the culture that defines itself in relation to another, but only at the expense of *Alius-culture* characterizing the relationship between cultures. This poses the problem of how *Alter-culture* can be discovered and even generalized, as it is in the Declaration of the Rights of Man authored by the United Nations. This is where the essentially semiotic aspect of human history intervenes: cultural evolution, it will be remembered, brings forth a kind of memory record that always remains available for later inspection, and thus for renewed selection. It is because we have access to the (genetic) mimetic or mythical memory of earlier exchanges with other human groups, which are handed down (generatively) in history, and later because these exchanges are preserved (generatively) in theoretic memory, that we are in due course able to take a structural view of different cultures, comparing them not only in diachrony but also in synchrony, probing their universals, but also their differences, and thus, by learning from tradition, arriving at a hermeneutics of cultures, which allows for the existence of *Alter-culture*, besides (or instead of) *Alius-culture*, and, in fact, for everything in between

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<sup>5</sup> It may actually be more relevant to oppose here the conceptions of Grotius and Pufendorf. See Baumard 2010.

<sup>6</sup> Space is lacking for discussing Baumard’s (2010) contention that, instead of altruism leading to sacrifice, what we have is a sense of justness.

these two ideal types. The Enlightenment is no doubt an important phase in this process, because it first codifies the ideal of universal *Alter-culture*, but it seems hardly feasible for these ideas to come out of thin air in the late eighteenth century. Rather, the air must have been in the process of thickening for some time already.

The integration of Europe during the Middle Ages (see Le Goff, 2003) under the sign of Christendom, and the discovery of really alien cultures, in particular in the Americas, in the 16th century, were no doubt fundamental moments in the history of this hermeneutical tradition (see Dunér, Sonesson, 2016). Still, it is impossible not to look upon the Enlightenment—in particular understood as “the long 18th century,” starting as least in 1680, as Paul Hazard (1961 [1935]) suggested—as forming the high tide of this tradition, less because of formal declarations such as the original Declaration of the Rights of Man by the Revolutionary Parliament, than because of the long struggle for equality and tolerance, occupying the best scholars from the middle of the 17th century to the end of 18th. Jonathan Israel (2001; 2006; 2010; 2011; 2014) has written several books showing, not only that the French Revolution, but also our present-day ideas of tolerance and democracy, are the result of a long process in the domain of ideas, originating in the Early Enlightenment, that is, in the times of Baruch Spinoza and Pierre Bayle, rather than in the period of High Enlightenment, which we associate with Newton, Locke, Montesquieu and Voltaire. According to Israel, the former phase was more radical (although later on Diderot continued this tradition) and it had more thoroughgoing consequences for our present day Western ideal of equality between citizens, as well as between different cultures, ethnical groups and sexes.

According to Israel (2006; 2014), no social cause can explain the French Revolution, since the masses had been poor for a long time, without causing any uproar. The idea that it is possible to overthrow authorities, however, had gained more and more support since the middle of the 17th century, mostly because of writings which were prohibited. We can know this, Israel (2006, 15 ff.) contends, by means of a “history of controversies,” that is, because of our knowledge about the general reaction to the ideas presented by some contentious thinkers, such as Bayle, Spinoza, and their manifold followers, particularly in Holland and, later, in France. Readers of most books about the Enlightenment no doubt carry with them the impression that Spinoza’s books fell on deaf ears, and that Bayle’s message was only a very vague inspiration for the Enlightenment as we know it, but Israel (2001; 2006; 2010; 2011) shows that both authors, singly or in combination, inspired numerous followers, as manifested in the books published at the time, and also provoked a lot of printed responses, some of them by well-known authors, but many others now forgotten. He also demonstrates, also from the printed evidence offered by the defenders of the status quo, that

these ideas, in the end, sifted down also to people who themselves were unable to read.

This, at first, may suggest that *mythical* memory, in Donald's sense, is sufficient to explain the change, and, more specifically, moving to a Bakhtinian terminology, that the presence of dialogue is. At present, obviously, we can only know about these controversies because books have been preserved from that period testifying to the controversies. But, unlike what was probably the case during the Middle Ages, it seems clear that, in this early phase (viewed from our perspective) of the age of printing, controversies were also increasingly played out, and not only transmitted, by means of pamphlets and other publications. Thus, we are already at the Donaldean stage of *theoretic* memory. Books and other kinds of prints thus emerged as the principal kind of organism-independent artefacts or, to use Donald's term, exograms.

There is a reason because of which evolution is not history proper: the latter is made up of a dialectics of memory devices, stemming from *mimetic*, *mythic* and *theoretic* stages of evolution, and their reactivation in interaction and dialogue. Giving a slight twist to a formulate originating in the Enlightenment, in the words of Gotthold Ephraim Lessing and Johann Gottfried Herder, we can call this the progressive semiotization of human kind.

#### 4. CONCLUSION

Taking a clue from contemporary evolutionary theory, we have explored parallels between biological evolution and cultural evolution, while also trying to isolate what is specific to the latter, also called history. We have tried to understand human history as part and parcel of evolution, and yet as something qualitatively different from what has gone before, at least from the somewhat precarious standpoint (as conceived within the whole of evolution) of human beings. In particular, we have been interested in understanding how the kind of relationship to other cultures illustrated by the notion of *Alter-culture* (connected, but not identical, to some senses of familiar terms such as empathy and altruism) is at all possible. That which makes human cultural evolution different, and *Alter-culture* possible, is the presence of *mimetic*, *mythical*, and *theoretic memory*, both within the life of the individual (genetic sedimentation) and that of the historical existence of the group (generative sedimentation).

Thus, we have initiated the quest, not only for bringing the two contemporary transdisciplinary perspectives of cognitive science and semiotics together, but to connect these two modern approaches to the classical tradition of the humanities, the tradition of tradition itself, familiarly known as hermeneutics, according to which the understanding of other cultures and

their artefacts takes its point of departure in an understanding of human beings as human beings, of ourselves as human beings, and of others as human beings—with the small provision that the human beings about whom we are talking emerged out of animal life, evolution, and more or less deep history. And that is cognitive semiotics.

### REFERENCES

- L. Barrett, R. Dunbar, J. Lycett, *Human Evolutionary Psychology*, Palgrave, Basingstoke 2002.
- D. Batson, *Altruism in Humans*, Oxford University Press, New York 2011.
- N. Baumard, *Comment nous sommes devenus moraux: une histoire naturelle du bien et du mal*, Odile Jacob, Paris 2010.
- B. C. R. Bertram, *Problems with Altruism*, in: *Current Problems in Sociobiology*, King's College Sociobiology Group (ed.), Cambridge University Press, Cambridge 1982, 251–267.
- M. Borrello, *Evolutionary Restraints: The Contentious History of Group Selection*, (Paperback ed.), University of Chicago Press, Chicago 2012 [2010].
- C. Boehm, *Hierarchy in the Forest*, Harvard University Press, Cambridge 2001.
- \_\_\_\_\_, *Moral origins. The evolution of Virtue, Altruism, and Shame*, Basic Books, New York 2012.
- A. Brown, *The Darwin Wars: The Scientific Battle for the Soul of Man*, Touchstone, London 2000.
- D. M. Buss, *Evolutionary Psychology: The New Science of the Mind* (4. ed.), Allyn, Bacon, Boston 2012.
- A. Cabak Rédei, *An Inquiry into Cultural Semiotics: Germaine de Staël's Autobiographical Travel Accounts*, Lund University Press, Lund 2007.
- L. L. Cavalli-Sforza, *Genes, Peoples and Languages*, Penguin, London 2001.
- A. Clark, D. Chalmers, *The Extended Mind*, *Analysis*, 58, 1998, 7–19.
- Ch. Darwin, *The Descent of Man and Selection in Relation to Sex*. New edition revised and augmented, D. Appleton and Co., New York 1871[1896].
- R. Dawkins, *The Extended Phenotype: The Long Reach of the Gene* (revised. edition), Oxford University Press, Oxford 1999 [1982].
- J. Decety, W. Ickes (eds.), *The Social Neuroscience of Empathy*, MIT Press, Cambridge 2009.
- J. Diamond, *The World Until Yesterday: What Can We Learn from Traditional Societies?* Penguin, London 2012.
- M. Donald, *Origins of the Modern Mind. Three Stages in the Evolution of Culture and Cognition*, Harvard University Press, Cambridge 1991.
- \_\_\_\_\_, *A Mind So Rare*, Norton, New York 2001.
- \_\_\_\_\_, *The Definition of Human Nature*, in: *The New Brain Sciences*, D. Rees, D. Rose (eds.), Cambridge University Press, Cambridge 2004, 34–58.
- \_\_\_\_\_, *The Exographic Revolution: Neuropsychological Sequelae*, in: *The Cognitive Life of Things: Recasting the Boundaries of the Mind*, L. Malafouris, C. Renfrew (eds.), McDonald Institute Monographs, Cambridge 2010, 71–80.
- L. A. Dugatkin, *The Altruism Equation: Seven Scientists Search for the Origins of Goodness*, Princeton University Press, Princeton 2006.
- D. Dunér, G. Sonesson, *Encounters: The Discovery of the Unknown*, in: *Human Lifeworlds: The Cognitive Semiotics of Cultural Evolution*, D. Dunér, G. Sonesson (eds.), Peter Lang, Frankfurt/M. 2016, 267–300.
- S. J. Gould, *The Structure of Evolutionary Theory*, Belknap Press of Harvard University Press, Cambridge 2002.
- J. Guilaine, J. Zammit, *Le sentier de la guerre. Visages de la violence préhistorique*. Seuil, Paris 2001.
- D. W. Hamilton, *Innate Social Aptitudes of Man: An Approach from Evolutionary Genetics*, in: *ASA Studies 4: Biosocial Anthropology*, R. Fox (ed.), Malaby Press, London 1975, 133–53.
- O. Harman, *The Price of Altruism. George Price and the Search for the Origin of Kindness*, Vintage Books, London 2011.

- P. Hazard, *La Crise de la conscience européenne*, Fayard, Paris 1961[1935].
- D. L. Hull, *Science as a Process: An Evolutionary Account of the Social and Conceptual Development of Science*, University of Chicago Press, Chicago 1988.
- E. Husserl, *Die Krisis der europäischen Wissenschaften und die transzendente Phänomenologie: Eine Einleitung in die phänomenologische Philosophie*, *Husserliana: Gesam-melte Werke VI* (2nd ed.), Nijhoff, Haag 1954.
- E. Hutchins, *Cognition in the Wild*, The MIT Press, Cambridge 1995.
- J. I. Israel, *Radical Enlightenment: Philosophy and the Making of Modernity 1650–1750*, Oxford University Press, Oxford 2001.
- \_\_\_\_\_, *Enlightenment Contested: Philosophy, Modernity and the Emancipation of Man 1620–1752*, Oxford University Press, Oxford 2006.
- \_\_\_\_\_, *A Revolution of the Mind: Radical Enlightenment and the Intellectual Origins of Modern Democracy*, Princeton University Press, Princetown 2010.
- \_\_\_\_\_, *Democratic Enlightenment: Philosophy, Revolution, and Human Rights, 1750–1790*, Oxford University Press, Oxford 2011.
- \_\_\_\_\_, *Revolutionary Ideas: An Intellectual History of the French Revolution from The Rights of Man to Robespierre*, Princeton University Press, Princetown 2014.
- E. Jablonka, M. J. Lamb, *Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life*, The MIT Press, Cambridge 2005.
- S. Juan, *L'école française de socioanthopologie*, Editions Sciences Humaines, Auxerre 2015.
- L. Keeley, *War before Civilisation*, Oxford University Press, Oxford 1996.
- J. Le Goff, *L'Europe est-elle née au moyen âge?* Seuil, Paris 2003.
- M-C. Marandet (ed.), *Violence(s) de la Préhistoire à nos jours*, Presses universitaires de Perpignan, Perpignan 2003.
- S. Moscovici, *L'âge des foules: Un traité historique de psychologie des masses*, Edition Complexe, Paris 1981.
- M. Nowak, R. Highfield, *Super-Cooperators: Evolution, Altruism and Human Behaviour or Why We Need Each Other to Succeed*, Canongate Books, Edinburgh 2011.
- M. Patou-Mathis, *Préhistoire de la violence et de la guerre*, Odile Jacob, Paris 2013.
- S. Preston, F. de Waal, *Empathy: Its Ultimate and Proximate Bases*, *Behavioral and Brain Sciences*, 25, 2002, 1–72.
- P. J. Richerson, R. Boyd, *Not by Genes Alone: How Culture Transformed Human Evolution*, University of Chicago Press, Chicago 2005.
- M. J. Rossano, *Evolutionary Psychology: The Science of Human Behavior and Evolution*, John Wiley. Sons, Hoboken 2003.
- G. Salomon, *Distributed Cognitions: Psychological and Educational Considerations*, Cambridge University Press, Cambridge 1997.
- U. Segerstråle, *Defenders of the Truth: The Battle for Science in the Sociology Debate and Beyond*, Oxford University Press, Oxford 2000.
- E. Sober, D. S. Wilson, *Unto Others: The Evolution and Psychology of Unselfish Behaviour*, Harvard University Press, Cambridge 1998.
- G. Sonesson, *The Signs of Life in Society—and Out of It: Sign System Studies*, 27, 1999, 88–128.
- \_\_\_\_\_, *Ego Meets Alter: The Meaning of Otherness in Cultural Semiotics*, *Semiotica*, 128, 2000, 537–559.
- \_\_\_\_\_, *Dos Modelos de la Globalización*, *Criterion*, 2002, vol. 33, 107–134.
- \_\_\_\_\_, *The Globalisation of Ego and Alter: An Essay in Cultural Semiotics*, *Semiotica*, 148, 2003, 153–173.
- \_\_\_\_\_, *A semiosfera e o domínio da alteridade*, in: *Semiótica da cultura e semiosfera*, I. Machado (ed.), Annablume, São Paulo 2007(a), 81–95.
- \_\_\_\_\_, *From the Meaning of Embodiment to the Embodiment of Meaning*, in: *Body, Language and Mind. Vol 1: Embodiment*, T. Ziemke, J. Zlatev, R. Frank (eds.), Mouton, Berlin 2007 (b), 85–128.
- \_\_\_\_\_, *The Extensions of Man Revisited: From Primary to Tertiary Embodiment*, in: *Embodiment in Cognition and Culture*, J. M. Krois, M. Rosengren, A. Steidele, D. Westerkamp (eds.), Benjamins, Amsterdam, Philadelphia 2007 (c), 27–56.
- \_\_\_\_\_, *The View from Husserl's Lectern: Considerations on the Role of Phenomenology in Cognitive Semiotics, Cybernetics and Human Knowing*, 16 (3–4), 2009(a), 107–148.

- \_\_\_\_\_, *New Considerations on the Proper Study of Man—and, Marginally, Some Other Animals*, *Cognitive Semiotics*, 4, 2009(b), 133–168.
- \_\_\_\_\_, *Between Homeworld and Alienworld: A Primer of Cultural Semiotics*, in: *Sign culture—Zeichen: Kultur Festschrift for Roland Posner*, E. W. B. Hess-Lüttich (ed.), Königshausen, Neumann, Würzburg 2012, 315–328.
- \_\_\_\_\_, *Divagations on Alterity*, in: *Writing, voice, text: Festschrift for Augusto Ponzio*, S. Petrilli, (ed.), Legas, Toronto 2013, 137–142.
- \_\_\_\_\_, *From Remembering to Memory by Way of Culture: A Study in Cognitive Semiotics*, *Southern Journal of Semiotics*, 5 (1), 2015(a), 25–52.
- \_\_\_\_\_, *Phenomenology Meets Semiotics: Two Not So Very Strange Bedfellows at the End of Their Cinderella Sleep*, *Metodo*, 3(1), 2015 (b), 41–62.
- \_\_\_\_\_, *Lifeworlds: The Cognitive Semiotics of Culture*, in: *Human Lifeworlds: The Cognitive Semiotics of Cultural Evolution*, D. Dunér, G. Sonesson (eds.), Peter Lang, Frankfurt/M. 2016(a), 23–62.
- \_\_\_\_\_, *Cultural Evolution: Human History as the Continuation of Evolution by (Partially) Other Means*, *Human Lifeworlds: The Cognitive Semiotics of Cultural Evolution*, in: D. Dunér, G. Sonesson, (eds.), Peter Lang, Frankfurt/M. 2016(b), 301–336.
- \_\_\_\_\_, *The Eternal Return of the New. From Cultural Semiotics to Evolutionary Theory and Back Again*, in: *Changing Worlds, Signs of the Times. Selected Proceedings from the 10th International Conference of the Hellenic Semiotics Society*, Volos, October 4–6, 2013, E. Deltso, M. Papadopoulou, (eds.), The Hellenic Semiotics Society, Volos 2016(c), 68–87.
- \_\_\_\_\_, *Epistemological Prolegomena to the Cognitive Semiotics of Evolution and Development*, *Language and Semiotic Studies*, 2 (4), 2016 (d), 46–99.
- \_\_\_\_\_, *The Evolution of Thinking. Cognitive Semiotics in between Deep History and the History of Mentalities*, in: *Cognitive History*, C. Ahlberger, D. Dunér, (eds.), Nordic Academic Press, Lund (in press).
- G. Sonesson, G. Sandin, *Urbanity: The City as the Specifically Human Niche*, in: *Human Lifeworlds: The Cognitive Semiotics of Cultural Evolution*, D. Dunér, G. Sonesson, (eds.), Peter Lang, Frankfurt/M. 2016, 191–228.
- D. Sperber, *Explaining Culture: A Naturalistic Approach*, Blackwell, Cambridge 1996.
- A. J. Steinbock, *Home and Beyond: Generative Phenomenology after Husserl*, Northwestern University Press, Evanston 1995.
- K. Sterelny, P. E. Griffiths, *Sex and Death: An Introduction to Philosophy of Biology*, University of Chicago Press, Chicago 1999.
- K. Stueber, *Rediscovering Empathy: Agency, Folk Psychology, and the Human Sciences*, The MIT Press, Cambridge 2006.
- M. Tomasello, *The Cultural Origins of Human Cognition*, Harvard University Press, Cambridge 1999.
- \_\_\_\_\_, *Origins of Human Communication*, The MIT Press, Cambridge 2008.
- \_\_\_\_\_, *Why We Cooperate*, The MIT Press, Cambridge 2009.
- \_\_\_\_\_, *A Natural History of Human Thinking*, Harvard University Press, Cambridge 2014.
- D. Welton, *The Other Husserl: The Horizons of Transcendental Phenomenology*, Indiana University Press, Bloomington 2000.
- D. S. Wilson, *Altruism and Organism: Disentangling the Themes of Multilevel Selection Theory*, in: *Multilevel selection. A symposium organized by David Sloan Wilson*, *American Naturalist*, 150, 1997, Supplement, 122–134.
- \_\_\_\_\_, *Darwin's Cathedral: Evolution, Religion, and the Nature of Society*, University of Chicago Press, Chicago 2002.
- R. A. Wilson, F. C. Keil, (eds.), *The MIT Encyclopedia of the Cognitive Sciences*, The MIT Press, Cambridge 1999.

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