In praise of resemblance: Human communicational universals as basis for mutual acceptance

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Abstract

In the human species, individuals establish social bonds mainly based on communication. Among the qualities that are used by individuals to include other individuals in their social network, the ability to demonstrate one's *relevance* in the eye of others proves crucial. In this respect, relevance can be more important than sharing a common culture or a common language. Fortunately, the principles that govern relevance in communication seem to be universal and deeply rooted in our biology, enabling any two individuals in our species to become friends, regardless of their differences.

From cultural differences to what makes us human

In his book *Eloge de la différence* ("In praise of difference"), Albert Jacquard (1981) rightfully insisted on the necessity to consider others' differences with oneself as a source of richness rather than as a reason for exclusion. In ingroup *vs.* outgroup thinking, group membership is based on valued similarities such as physical appearance or idiosyncratic cultural traits, whereas any corresponding difference is taken as basis for segregation and contempt. I forcefully endorse Jacquard's claim that such "groupist" attitude should be overridden and that one's group limits should be extended to include any human being. From this latter perspective, differences between individuals are only relevant as sources of mutual improvement.

Praising differences is a good thing, as long as it allows us to remember that we all belong to the same species, that all people on Earth share 99.997 % of their evolutionary descent and that up to 99.9 % of our defining DNA is identical from one human individual to the next.

Our obsession with differences, which are emphasized for worse or for better, focuses on only 0.1 % of our essence. Our minds seek for any reason to singularize themselves and/or the group they identify with. Therefore any fortuitous physical or cultural difference is blown up out of proportion leading, in traditional societies, to common judgements of non-humanity hastily passed on any individual outside one's group.

Our genetic similarity is not only what makes up the biological unity of our species. We are one also *cognitively*. Each member of the human species is equipped with cognitive abilities that enable her/him, not only to recognise other human individuals as belonging to the same species, but also to establish social bonds with them. In this, we do not differ from many other species. Any dog knows whether another animal is or is not a dog and is able to engage in species-specific activities with it (fighting, mating, play…). It is of prime importance for us, as humans, to understand the cognitive devices through which we grant human essence to other entities and establish social bonds with them. But human beings differ from dogs and other animals in one crucial aspect.

Human beings can not only grant humanity to other members of their species, they can also *deny* it. This ability to make binary predication: "This being is of my kind" *vs.* "This being is not human" (sometimes despite all proof of the contrary) makes it all the more important to understand what triggers one judgment or the other. This is especially important in a context of globalization, in which we can no longer afford mutual exclusion. The ability to establish successful communication is essential when it comes to inclusion/exclusion decisions. Since relevance is the determining factor of successful communication, this paper is devoted to examining some universal aspects of relevance.

In what follows, I will make a brief survey of some universal aspects of human communication, considering spontaneous storytelling and argumentation in turn. I will suggest that the cognitive apparatus that allow us to be relevant in each case is too specific and too complex to be a mere product of culture. I will conclude about the relative importance of similarities and differences and draw conclusions concerning mutual understanding across cultures.

Universals in human communication

When westerners made first contact with lost tribes during the last century, they reported misunderstandings such as the belief that intruders were of divine nature. But they never reported what should be expected in case of contact with what would appear to us to be an alien species: lack of common signs, lack of any common reference, lack of any disposition to interpret others' behaviour as intents to communicate. Science fiction often depicts such alien contacts, but understandably most often grants aliens with all the required cognitive equipment for successful communication with humans. Our leniency as audience of such fiction should not make us forget how idiosyncratic our communication behaviour is. Even if we share more than 99.85 % of our evolutionary past and 98% of DNA with chimpanzees and bonobos, our sister species, our main communication behaviour is totally alien to theirs. Chimpanzees are not seen giving potentially useful information about the surrounding world to each other. Though quite curious of many immediate events, their attention remains a private concern: they are not seen pointing, nor drawing others' attention towards the event (Tomasello 2006). Alarm calls are often invoked as example of useful information broadcasted to the group. It might be the "closest" analogue in animal kingdom of what humans do with language. The Darwinian status of alarm calls is not yet fully understood. Their existence might receive the same kind of explanation as the existence of human language. Another classical example is the famous bee dance through which bees are able to indicate the location of food sources to each other (von Frish 1967). Note, however, that bees communicate exclusively among sisters. This fact alone makes a Darwinian explanation easy (Hamilton 1964). As we will see, human language poses a much harder problem.

Human communication behaviour is highly stereotyped, probably much more than what most people are aware of. Language is primarily used during spontaneous conversation. Human beings spend about one third of their awake hours conversing with conspecifics (Mehl & Pennebaker 2003). When involved in conversation, individuals engage in two major forms of verbal behaviour: event reporting (non fiction narratives) and discussion (argumentation), and marginally in various interactions involving language that we will not consider here (low-level action coordination, ritual speech, song, etc.). Together, narratives and argumentation represent more than 90 % of speaking time. Conversational narratives may fill up from 25 % (Dessalles 2008) to 40 % (Eggins & Slade 1997, p. 265) of conversation proper, the remainder being devoted to argumentation. Understandably, the relative proportions crucially

depend on the situation of interaction. It is interesting to note that the importance of storytelling in conversation has been overlooked until recently, simply because it is difficult to elicit in laboratory conditions.

Storytelling and argumentation are not only universal human activities. They rely on precise cognitive mechanisms that are unlikely to vary significantly from one culture to the next. If variation were dominant, if verbal interactions were ruled by cultural conventions, we would be alien to each other across cultures, with no possibility to understand anything but actions. Fortunately, any two healthy human individuals on Earth can rapidly develop mutual understanding. Let us go further into the reasons why this is the case, by examining in turn the cognitive basis of storytelling and of argumentation.

The ingredients of interest

Any non-fiction story, anywhere on Earth, must meet the same requirement to be accepted by conversation partners: it must arouse their interest. Of course, individuals from different cultures or even within the same culture have no reason to be interested in the same matters. It is nevertheless possible to bring out general laws that human brains seem to follow when determining what is interesting and what is not. I will mention a few of such "laws", as I could formulate them after having analyzed and modelled dozens of hours of spontaneous conversation (Dessalles 2008). One such law reads:

$$Interest = Hypothetical\ Emotion + Unexpectedness$$

The hypothetical emotion one associates to a given event can be assessed through prospect estimates, such as the insurance policy one is ready to pay to avoid an undesirable event. I do not want to loose my credit card; I do not want to loose my left arm either. Though my emotion would clearly be more intense in the latter case, the hypothetical emotion associated to the former eventuality might be greater, as the loss of a credit card is much more likely. In the above equation, *Hypothetical Emotion* is a positive intensity that does not take the (positive or negative) valence of the emotion into account. Individuals are indeed interested in sharing emotionally negative events at least as much as positive ones (Rimé 2005:109).

The most spectacular determining factor of interest is unexpectedness, as its cognitive nature leaves little room for cultural influence. Unexpectedness is defined as:

Unexpectedness = W-Complexity – Complexity

Complexity is taken in its technical acceptation: the complexity of a state of affairs is the length of its minimal description (Li & Vitányi 1993). In general, complexity *stricto sensu* cannot be computed. We are more interested, however, in *cognitive complexity*, defined as *the length of the minimal available description* (the additional mention "available" is crucial here). The concept of cognitive complexity is no less "objective" that the standard definition, which must take a given machine as reference when interpreting descriptions. Cognitive complexity is defined by reference to a "cognitive machine": the interpreting abilities of the observer at a given moment.

W-Complexity differs from cognitive complexity in two respects. First, all objects that are believed to exist in the world have zero W-Complexity (W stands for "in the world"). Second, the way events are produced "in the world" must abide by the causal rules of that world, as they are known or imagined by the subject (note that W-Complexity is therefore no less cognitive than cognitive complexity).

Some examples will make the concept of unexpectedness more concrete. Suppose a fire occurs next block. According to your experience, such fires do occur, but typically much farther away. The determination of the place, if one follows the determinism of the usual "World", requires quite a long description (*e.g.* a set of directions). If the fire happens to break out next block, the W-complexity does not change. However, the actual complexity of the place (minimal description) is much smaller, as the set of directions to reach it is very short. A fire occurring in the vicinity is thus unexpected, according to the above definition. Note that for the similar reasons, a fire occurring at a prominent place will be equally perceived as unexpected, due to the simplicity of the place. Indeed on July 22, 2003, a minor blaze on the third floor of the Eiffel Tower was reported in several French national newspapers.

In October 2005, the US news widely reported that a man named Judd Alan Gregg had won $850 000 in the US Powerball lottery. As long as the winner is an obscure individual, it remains complex, as the minimal information required to singularize him from all other potential winners is significant. But Judd Alan Gregg happens to be a US Senator. Prominent people are cognitively simple (there are only 100 US senators), much simpler than usual lottery winners. The event is thus unexpected, according to the definition.

Fortuitous encounters are particularly appealing to human minds, especially when they happen in a remote place and when the encountered person is simple, a neighbour say. According to the usual functioning of the "world", the encountered person is expected to be a complex one: anyone among the multitude of people who could be there at that time. The actual presence of a close acquaintance provokes a complexity drop and is thus unexpected. A more complex location increases the complexity of individuals that could possibly be there, and thus augments the complexity contrast. Conversely, the simplicity of the encountered person (a neighbour or a celebrity) diminishes the actual complexity, and also increases the complexity contrast. This example is particularly revealing, as the complexity of the place and the simplicity of the encountered individual play transparent roles.

The above laws are cognitive by nature. For a given event to be perceived as interesting, some definite computations must be performed that involve complexity assessments. Though the expression of emphasis, for example, may significantly vary depending on the culture when people tell stories, there is no reason to think that culture may influence in anyway the computations on which the perception of interest relies. In all cultures on Earth, individuals are interested in events that appear to them as unexpected, and they cannot help but communicate about such events.

How argumentation works

Argumentation obeys definite laws as well. This time, the underlying cognitive computation is better captured by an algorithmic procedure rather than by a formula. To be set off, the procedure must be given a *cognitive conflict*. Any spontaneous discussion is prompted by an *incompatibility* between two propositional beliefs or desires. For instance, one may be surprised by the fact that the price of a suburb train ticket is different when returning. The observation conflicts with a belief grounded in symmetry: the price should be the same in both directions. This is an example of *epistemic conflict*, an incompatibility between beliefs. This cognitive conflict triggered a conversation that I could observe, in which participants tried in turn to suggest possible explanations.

Cognitive conflicts may oppose not only beliefs, but also desires. For instance, a woman called up her husband because she had forgotten her keys and wanted to enter their home. There is a conflict here between the desire to enter the house and the belief that she won't be able to open the door. The conversation went on with both participants considering various

solutions to the problem (premature return of the husband, borrowing a ladder from a neighbour, …).

Human argumentation is highly constrained. Any move by participants aims at *solving* a current shared cognitive conflict or make a *new conflict* manifest. For instance, when the husband suggests that his wife may try to find a key that he had previously hidden somewhere in the garden and then go into the house through the cellar, she replies that the internal door between the cellar and the house might well be closed, thus raising a new cognitive conflict in answer to her husband's proposal.

Though the way of expressing arguments during discussions may considerably vary depending on the culture in which one grew up, the way the *content* of utterances is designed by participants must be mainly invariable, as it is governed by a cognitive "algorithm". In a nutshell (see Dessalles 2008 for a detailed model) the algorithm reads:

- Conflict: locate an incompatibility

- Abduction: look for a cause for the weaker term of the conflict, *i.e.* the term for which the attitude (belief, disbelief, desire or non-desire) is of lesser intensity. Propagate the conflict onto that cause.

- Solution: When a non-conflicting cause is found, or if the intensity of the weaker term of the conflict is regarded as tolerable, the procedure starts anew or stops if no new conflict is discovered.

- Negation: When abduction fails, invert the conflict by negating both terms and start anew.

This Conflict–Abduction–Negation procedure (CAN for short) relies on non-trivial cognitive mechanisms that can hardly be considered as cultural products. On the contrary, there are reasons to consider both the human sensitivity to unexpectedness and the CAN procedure as components of our biology, and thus as characteristics that have been produced through the action of natural selection. In what follows, we briefly consider the particular conditions that might have led to their emergence in our phylogeny.

Why share information?

In the Darwinian world in which we live, giving away information to conspecifics is apparently an absurd strategy. It favours other individuals, which are by definition genetic competitors (unless they are kin, as in the case of bees) at the expense of the information giver. Solving this issue is key to understanding why we are a talking species. It is a wonder that this *paradox of human language* has not been raised until the last decade.

The paradox explains why in most other species, individuals refrain from giving useful information to others. Most animal communication is devoid of semantics. It is mere repetitive advertisement, as in the case of bird song. It is in the interest of the animal to lie about its qualities when advertising them. Darwinian selection then leads to exaggerated and repetitive signals, as receivers can only assess their reliability when their cost is close to the limit of what signallers can afford (Krebs & Dawkins 1984, Zahavi & Zahavi 1997). Strangely, human language seems to be an exception to the rule.

Solving the paradox of human language is not easy. Some have considered the possibility that language could be a mere cultural invention (Noble & Davidson 1996:214; Tomasello 1999:44; Kirby 2000). As we saw, the specificity and universality of the mechanisms involved in the production of relevant utterances leaves little room to such possibility. The ability to compute cognitive complexity or to perform abduction from a cognitive conflict bears little resemblance with cultural skills like writing or jazz improvisation. The latter are not universal and must be actively learned (whereas language is automatically learned by children).

Other authors invoke a new mechanism to account for the existence of language: reciprocal cooperation. Though reciprocation is virtually absent of animal kingdom, especially among non-kin (a possible exception is vampire bat, Wilkinson 1984), information "exchange" in our species is sometimes claimed to be primarily based on reciprocal cooperation (Pinker 2003:28; Nowak & Sigmund 2005:1293; Nowak 2006:1561). But cooperation can only exist in the case of high benefit-to-cost ratio and when cheating detection is efficient (Dessalles 1999). These prerequisites do not hold in the case of language. Many stories and many discussions are about futile matters, and speakers talk to anyone ready to listen to them. Contrary to the cooperation scenario, there are fewer ears striving to get information than

talkers in search of an audience. In a cooperative world, cooperative acts are rare, highly valued and begged for. The human world, by contrast, is overflowing with cheap information.

A further attempt to solve the paradox of human language considers that language is, like most animal communication, just advertisement. Simply, it differs from other animal signalling in two respects: what is being advertised and how reliability is ensured. I suggested that language is used to advertise the ability to "be the first to know" (Dessalles 2007). At some point in the hominin lineage, lethal weapons were invented that enabled any individual to easily kill any other, for instance by getting advantage of the latter being asleep (Woodburn 1982:436). The best strategy to anticipate the risk is to join knowledgeable individuals, those who are aware of their physical and social environment and are able to notice anything unusual. As a consequence, the status of individuals who are able to demonstrate their superiority in this matter is automatically increased. In our species, and probably in some preceding ones such as *homo ergaster*, individuals have been competing for producing unexpectedness in others' minds, thereby showing off their quality as good observers.

This may explain why we are so sensitive to unexpectedness and so prone to share unexpected events. As soon as by the age of ten months, children spontaneously point to unexpected stimuli (Carpenter, Nagell &Tomasello 1998). We devote more than one hour each day to telling stories and sharing news. This unique behaviour is due to the fact that in our species, individuals take the ability to elicit surprise into account when establishing social bonds and updating their social network. Individuals who seem uninformed and are unable to violate others' expectations are perceived as boring and end up alone.

The propensity to signal unexpected events may thus be indirectly due to the fact that human beings are a danger to each other. By saying "Hey, look at this!", even about some futile (but still unexpected) event, we unconsciously mean "You'd better accept me as a friend, because my observational abilities may save your life". This behaviour partially accounts for human universal narrative behaviour. Does it have anything to say about argumentation?

As long as signalled events can be checked (Palfrey 2000), there is no need for argumentation. Argumentative behaviour may have originated in the ability to detect lies (Dessalles 1998). By detecting cognitive conflicts between what others say and what we hold to be true, we are able to deter liars who attempt to produce unexpectedness at very little cost. Abduction and the whole CAN procedure result from resistance to undue accusations of lying. Note that

these new abilities extended the scope of hominin communication to sharing any events, not only checkable events. Moreover, the ability to check and restore consistency became an asset in its own right when dealing with murdering risks and entered the limited set of criteria used to choose one's friends.

We must now remember that human conversation is not only about unexpectedness and consistency, but also about sharing emotions.

Sharing values

Why do human beings spend so much time in sharing emotional events and get so much pleasure from it? Again, this is a universal, but unique characteristic of our species. When doing so, individuals often reveal much of their weaknesses and give away information that could easily be used against them. They often ask the recipient of such confidence to keep it secret, but they also don't hesitate to propagate information that was given to them under similar confidentiality conditions (Rimé 2005:171).

As in the case of information sharing, one can find vague analogue in animal species. For instance, in many primate species, individuals spend about 20 % of their available time grooming each other. Grooming time is highly correlated with the strength of social bonds. Language can be seen as having replaced grooming as a way of maintaining social bonds in our species (Dunbar 1996). This does not explain why sharing emotional events is so important in our species and virtually absent in others.

In a species in which killing each other has become so easy, only solidarity bonds prevent life from becoming cheap. In all cultures, taking one's life may be easy to start with, but murderers run the risk of retaliation. This is only true if the victim had some social existence, *i.e.* if she/he had been able to attract reliable friends. How can one be sure that one's friends are reliable?

Primate solution to prove one's faithfulness is to spend time grooming friends. Such behaviour is costly in time; therefore it is reliable according to Zahavian principles (Zahavi & Zahavi 1997). Grooming is conspicuous and reveals alliances to all, while insuring that one has only few well-chosen friends. In the human context, this is not enough. Alliances are dynamic and opportunistic changes are frequent and easy. Time spent together is still a marker of faithfulness (Dunbar 1996), but humans need to know more about whom they form

an alliance with. By sharing emotional events, insofar as emotions cannot be easily faked, individuals reveal their true nature. Through gossip for instance, they show which moral values they value every time they show themselves offended by some third party's behaviour.

It is in the interest of anyone to verify that her/his friends stick to the values she/he expects from them. By selecting friends according to their ability to select emotional events and retell them convincingly, one has better chance to end up with reliable friends. No wonder that the kind of values praised in such narratives have social implications: solidarity, generosity, concern for friends, courage, faithfulness… No wonder that negative gossip denounce the negation of these values: bretrayal, selfishness, thoughtlessness, cowardice, dishonesty… Though many (moral, religious, behavioural…) values are by essence cultural and may significantly vary from place to place, the kind of values from which conversational narratives get their emotional power are surprisingly similar across the world.

Human differences in their true perspective

The picture one may get from the preceding development is that all human beings are alike as far as their conversational behaviour is concerned. Of course, this impression, if taken to the extreme, is blatantly refuted by observation. Everyone who masters several languages can verify how important even subtle differences can be in verbal interaction. It is well-known, for instance, that during discussion, disagreement can be expressed head-on in certain cultures and through circumlocutions or mere slight hesitations in others. In some languages such as Aymara, speakers must make clear whether the events they are reporting are first-hand or second-hand. My intention is neither to negate these differences nor to claim that they are inconsequential. We should remember, though, that human beings have been selected to overemphasize differences and might sometimes forget that there is an iceberg underneath.

Let me take another metaphor. Musicians are able to recognize slight variations when hearing a piece that they already know perfectly well. At some point, all their attention is geared toward the variations, so that they get all their pleasure from being surprised by the performer's imaginative play, while being blind to the beauty of the overlearned theme. Our attitude toward language is not far from this.

The cultural differences that modulate language use strike us so much that we loose the sense of proportions. From a cognitive and biological perspective, these differences are no more

than slight variations on a huge body of common conducts. We all share the same human nature, we all share the same evolutionary past; our ancestors were all selected to be relevant in order to attract friends into their social network. This is the only reason why mutual understanding is possible on Earth. We do not speak the same languages, but we all use the same language. Thanks to our common frame of reference, namely relevance, we are able to establish social bonds, beyond cultural gaps, with any other human being in this world. Cultural differences may prevent us from perceiving relevance in others. We must remember how ridiculously small these differences are in comparison with the amount we share by common descent. Once we put them in their true perspective, we can enjoy these differences as intriguing conversational topics and be amused at making comparisons.

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