

A cognitive pragmatic perspective on communication and culture¹

1. Introduction

I would define a social situation as an environment of mutual monitoring possibilities, anywhere within which an individual will find himself accessible to the naked senses of all others who are 'present', and similarly find them accessible to him.

Goffman ([1964] 1972: 63)

The impact of Erving Goffman's work on the development of social approaches to human interaction has been immense, but the fundamentally cognitive character of his definition of "social situation" - clearly reflected in the notion of "mutual monitoring" - has been largely ignored. This is apparent in the way the term *situation* is characterized within Fishman's (1972: 48) sociolinguistics (as 'the co-occurrence of two (or more) interlocutors related to each other in a particular way, communicating about a particular topic, in a particular setting'), in Halliday's (see Halliday and Hasan 1976: 22) functionalist view of language (where *field*, *mode* and *tenor* are the key determinants of situations), in Hymes' (1972) ethnographic approach to communication (in which the categories of *setting*, *participant*, *end*, *act sequence*, *key*, *instrumentalities*, *norms of interaction and interpretation*, and *genre* provide a template for analysing communicative events) and in much other work in the loosely defined field of (social) pragmatics. To be sure, these authors are aware of the psychological nature of *situation*. Thus, Halliday and Hasan (1976) observe:

The term SITUATION, meaning the 'context of situation' in which a text is embedded, refers to all those extra-linguistic factors which have some bearing on the text itself. A word of caution is needed about this concept. At the moment, as the text of this Introduction is being composed, it is a typical English October day in Palo Alto, California; a green hillside is visible outside the window, the sky is grey, and it is pouring with rain. This might seem to be part of the 'situation' of this text; but it is not, because it has **no relevance** to the meanings expressed, or to the words or grammatical patterns that are used to express them. [emphasis VŽ]
(Halliday and Hasan 1976: 21)

Despite the general awareness that the concept of (*communication*) *situation* calls for a psychological explanation, existing definitions of this term tend to have a distinctly externalist-descriptive, rather than an internalist-explanatory flavour. The main aim of

this article is to provide an introductory internalist, cognitive-psychological, account of communicative interaction in the context of culture. The lack of anything approximating a universally accepted theory of communication or a universally accepted theory of culture inevitably makes this endeavour possible only with some radical corner-cutting.

Although several natural points of contact between communication and culture have been identified in commonsense terms, the indissoluble link between the two has defied explanation. The following passage provides some intuitive support for the cognitive, Relevance-theoretic approach (Sperber and Wilson 1986/95) on which this article is based:

Over time, the habitual interactions within communities take on familiar forms and structures, which we will call *the organization of meaning*. These structures are imposed upon the situations which people confront and are not determined by the situation itself. For example, the wink of an eye. Is it a physical reflex from dust in the eye? Or an invitation to a prospective date? Or could it be someone making fun of you to others? Perhaps a nervous tick? The wink itself is real, but its meaning is attributed to it by observers. The **attributed** meaning may or may not coincide with the **intended** meaning of the wink. Effective social interaction, though, depends on the **attributed** meaning and **intended** meaning coinciding [emphasis VZ]. (Trompenaars and Hampden-Turner 1997: 24)

This passage suggests the following view: culture is a stable system of relations between (visible) things in the environment of people (“forms and structures”) and their (invisible) significances, shared by a social group. (Note that the terms *cultural* and *social* are nearly synonymous. Following the common practice in social psychology and anthropology, I will call *cultural* those social things which are relatively stable and widespread). This view of culture as a phenomenon suggests that particular cultures should be thought of as having fuzzy boundaries and that they can be identified in terms of indefinitely many various characteristics of social groups (such as: ethnicity, nation, profession, age group, sexual orientation).

Communication is different from other forms of social interaction in that it involves making evident the intention to convey information by integrating the evidence of this intention with the context. (It should be noted that the term *context* is used more broadly in social than in cognitive approaches to pragmatics. In social approaches *context* is the total linguistic and non-linguistic background to an act of communication. In Sperber and Wilson’s (1986/95) cognitive account of communication, this term refers to a set of mentally represented assumptions which interacts with new information from various sources, including communication.) It is this communicative intention (i.e. the intention to make evident the intention to inform) that crucially distinguishes a (deliberate) wink from an involuntary twitch, which is also informative because it may provide evidence for various conclusions, such as: *the twitch was caused by dust in the eye*. The concept of *communicative intention* is important, because people generally pay attention to those phenomena which are evidently produced with the intention to convey information. For example, we tend to pay attention and attribute meanings to blinks, which we recognize as deliberate, rather than to twitches are likely to remain unnoticed, because they are not perceived as produced with the intention to convey information.

Whilst culture is characterized by meanings shared within a social group, communication is a mode of social interaction through which new meanings can come to be shared. However, communication is generally at risk of failure, because the attribution of meaning depends on the interlocutors' ability to reason in the way intended by the communicator and to select the right context for the interpretation of the communicative act. As there is no guarantee that the addressee will interpret the communicative act in the way intended by the communicator, there can be no guarantee that the attributed and the intended meanings will coincide. Since a person's cultural knowledge crucially determines the contexts which are available to them, the risk of miscommunication is generally higher in interactions between people from different cultural backgrounds. Therefore, a plausible account of *inter*-cultural communication should provide answers to the following questions:

- What is cultural knowledge?
- How does cultural knowledge contribute to context?

I try to show that the theoretical backbone of Sperber's (1996) epidemiological approach to culture and Sperber and Wilson's (1986/95) Relevance-theoretic approach to communication provide explicit and well-motivated answers to these questions. The article is structured as follows: first, some of the main tenets of Relevance Theory are illustrated with a few examples of (inter-cultural) communication. Second, the epidemiological approach to culture is introduced, and a way of characterizing the distinction between *intra*- and *inter*-cultural communication is suggested. Finally, the framework of Relevance Theory is outlined in order to show how the contribution of cultural background to the context can be integrated with this approach to communication in a principled way.

2. Examples for a Relevance-theoretic account of (inter-cultural) communication

In Relevance Theory terms, human cognition is geared towards improving the belief system of individuals and the most important type of social interaction through which this goal is pursued is called ostensive-inferential communication. On this view, an act of ostensive behaviour (such as a pointing gesture, a [deliberate] wink, or an utterance) makes evident the communicator's intention to inform the addressee/audience of something. Comprehension is an inference (i.e. reasoning) process which takes the evidence presented by the communicative act (i.e. an ostensive stimulus) and the context as inputs, and yields interpretations as outputs. These tenets of Relevance Theory are illustrated by the following examples of (*inter*-cultural) communication:

- (1) A British family had lived in an African country for several years. They had become familiar with the local language and culture. After the break-out of civil war in the region, they were forced to leave the country. Before leaving, they accepted the local peoples' offer of help and asked them to try and "rescue" some of their "special things". Quite some time later, they were somewhat surprised to find that their TV set and video recorder were the main rescued items.

In this case, the British participants did not take account of the context (i.e. the set of assumptions) in which their interlocutors would interpret the phrase “special things”, despite their knowledge of the local culture (most likely, because they had to divide their attention between several pressing concerns, which made them revert to their more intuitive cultural mindset)².

In other instances of miscommunication, the intended interpretation is recognized, but it is not accepted. Consider (2):

- (2) [The following is an extract from an interview with Haldun Aydingün, the author of the book *The Divorced Man*, described in the Cyprus Turkish Airlines’ in-flight magazine *Caretta* (September 2005) as “an entertaining look at the institution of marriage, how the institution and, more importantly, a break with this institution, affects men and their behaviour”.]

Interviewer:

You make allusions to the male make-up and even say, “I wish the male body had a control button that would suppress sexual impulses.” On the other hand, it is clear that you value faithfulness and the institution of marriage. Aren’t these two somewhat contradictory?

Interviewee:

No, not in the manner you have just described. What I was trying to communicate here was the fact that the male sexual impulse was very basic, a need that had to be met. If sexuality is expressed in a healthy way in marriage then there is a chance that marriage and faithfulness can be non-contradictory.

The interviewee’s intention to communicate that he holds modern views on gender relations is very salient in the interview from which this excerpt is taken. However, rather than accepting this message, many (Western European) readers will be more convinced by the inadvertently produced evidence of the interviewee’s old-fashioned views which may easily appear sexist, or, at least, not politically correct, in the modern Western world (e.g. *A man’s sexual needs are naturally stronger - more basic - than a woman’s; Men are not able, or they are less able than women, to control their sexual impulses*, etc.). So, in this instance, communication will be less than successful in case the communicator has inadvertently conveyed some belief-assumptions which contradict those that he evidently intends to convey.

Miscommunication may also arise because some evidence of the communicative intention has not been recognized by the addressee:

- (3) At a meeting recently held in Japan, an American was discussing two alternative proposals with his colleagues, all of whom were native speakers of Japanese. The American was well schooled in the Japanese language and was, indeed, often called ‘fluent’ by those around him. At this meeting, proposal A was contrasted to proposal B, and a consensus was reached about future action, and the meeting then dismissed. Upon leaving the room the American commented, ‘I think the

group made a wise choice in accepting proposal A'. A Japanese colleague, however, noted, 'But proposal B was the group's choice.' The American continued: 'But I heard people say that proposal A was better'. The Japanese colleague concluded, 'Ah, you listened to the words but not to the pauses between the words.' (Brislin 1978: 205; quoted in Gutt 2000: 78).

In this situation, pauses were intended to be recognized as produced with the intention to convey something important for the interpretation of the words used (i.e. that the speaker merely acknowledges the hearer's view, whilst rejecting it politely). The hearer misunderstood the utterance because he had overlooked the communicative intent behind the pauses due to his lack of appropriate contextual cultural knowledge about the way pauses are used as ostensive stimuli.

The success of genuine communicative acts, such as (1) to (3), depends on the informative intention being recognized. However, in many situations the fulfilment of the informative intention depends on the informative intention not being recognized. Consider (4):

- (4) **Situation:** Zoë, a final year undergraduate, is waiting to see one of her lecturers to discuss her dissertation topic with him. After the lecturer had asked her a couple of times to wait a little bit longer, Zoë comes up with an alternative action plan, and says, roughly:

"That's alright. I'll come to see you later this week. I'll first go and talk about it with Chloë. She's already started working on her dissertation, so she can help me with the topic."

What did Zoë intend to communicate to her lecturer? She overtly communicated that she did not mind coming another time and that she would come to see him much better prepared as a result of talking first to a fellow student. That was the informative intention that Zoë made evident (i.e. her communicative intention). But the lecturer drew a further conclusion on the basis of what Zoë had said. In his opinion, Zoë's friend Chloë had been going about her dissertation project in a way which did not provide the best example to follow, so he insisted that Zoë should stay and discuss her topic with him. As Zoë had not said (or otherwise made evident) anything that would indicate a negative attitude towards the lecturer, she did not communicate that she disapproved of waiting, that she did not think much of the help the lecturer would give her, that she would like to know what the lecturer thought about Chloë's work, and so on. A couple of years after she had graduated, the lecturer saw Zoë. He asked her if she remembered this incident and he told her how she had inadvertently made him change his mind, so he decided to talk to her without further delay. But Zoë corrected him: "No! That worked!" She explained that she had had the intention to inform the lecturer that it was desirable that he should see her promptly, but rather than making this intention evident, she had concealed it, hoping that he might reason in the way he actually did.

This example illustrates an important general point: in instances of overt communication, the communicator makes the informative intention evident and, in doing so, takes responsibility for what is communicated. There are various reasons for not

wanting to convey information overtly, but people generally resort to covert social interaction when they do not wish to take responsibility for what they are trying to convey or when making the informative intention evident would jeopardize its fulfilment. In the situation described in (4), Zoë's informative intention (that the lecturer should change his mind and see her promptly, possibly also that he should reveal his opinion of Chloë's work) was fulfilled because it was concealed successfully.

Covert forms of information transmission are particularly important in intercultural social settings. For example, what might be a successful way to conceal the evidence of a particular informative intention in one culture, may seem transparent in the context of another. The following excerpt, taken from an open letter by the Cyprus Turkish Airlines' Acting Manager, published in the airline's in-flight magazine *Caretta* (September 2005), clearly illustrates this point:

(5) **Welcome Aboard**

The hot summer season will soon be a thing of the past. Unfortunately, the aviation sector has experienced some uncomfortably hot moments this summer as well. The accident involving a plane from Southern Cyprus saddened all of us deeply. We would like to take this opportunity to convey our condolences to the people of Southern Cyprus and the aviation community.

This accident, which grieved all of us so deeply, has shown once again just how seriously the aviation sector must take its responsibilities.

[...]

The Helios crash has been yet another reminder to the entire sector that there must not be negligence in even the smallest details.

Our company has always operated with this mindset, constantly increasing and strengthening its precautions and efforts regarding flight safety and will continue to host its passengers with confidence.

The text from which this excerpt is taken makes evident the informative intention to express solidarity with another airline and the people affected by the accident, but many readers will reject this informative intention, because of what they take to be compelling evidence for the conclusion that the writer has a covert aim, a hidden agenda, as it were: to put down a rival company in order to promote his own. What must have seemed a clever and legitimate marketing move to the writer of the letter, is seen as a transparent, hypocritical and insensitive marketing ploy in the cultural context of many people in the intended readership.

These examples point to the importance of culture in context selection. Therefore, an explanatory approach to *inter-cultural* communication should provide an account of the way cultural knowledge is represented and used in communication.

3. The epidemiological approach to culture

Like some other animals, humans represent mentally various aspects of the world they live in. Unlike any other animals, humans have the ability to form *metarepresentations*, i.e. belief-representations (*beliefs* hereafter) about the mental representations of their physical and psychological environments. Their ability to do this is evidenced by all things which are part of culture: a given thing is a hammer, not in virtue of the representation we form of its shape, form and other visible features, but because we make such representations the objects of various beliefs (e.g. that the thing in question is used for a particular purpose). To give another example, consider the mental representation of a particular thing (let's call it *A*) as a small stone. It is easy to think of circumstances which may lead one to make the mental representation: *A is a small stone* the object of beliefs, such as: *A is a small stone which can be used to keep the door open*, or *A is a small stone which can be used to prevent paper from flying off the desk when the window is open*. When such beliefs about the representation of *A as a small stone* become accepted by the members of a social group, *A* becomes an artefact: a doorstep or a paperweight. Of course, a typical artefact is a thing which has been designed and produced with a specific purpose in mind. However, what makes it a cultural thing is the existence of widespread and stable beliefs about (mental representations of) it, rather than the fact that it has been consciously designed and produced. It should also be noted that, when a mental representation of a psychological phenomenon, say, the emotional experience of anger, is metarepresented - in other words, when the representation of the direct experience of this emotion is made the object of some beliefs (such as: *[this] is the way one feels when something unpleasant one does not want to happen happens, although its occurrence could/should have been avoided*) - the direct emotional experience of anger becomes "visible" to the mind, and, therefore, available for symbolic representation and communication. In sum: the metarepresentational capacity is the human mind's capacity to think about itself and it is the biological prerequisite for the emergence of cultural categories.

Some important differences between the communicative behaviour of people and animals suggest that the metarepresentational capacity is unique to humans. For example, it is often observed that animals engage in complex forms of social behaviour: bees pass on to other bees information about the location of pollen-rich fields and lions hunt in groups by ambushing their prey. But a bee which "reads" another bee's dance gets the information content directly, as it were, without making the dance or its information content the object of beliefs (see von Frisch 1967). To give another example, we can realistically imagine a group of lions preparing for the hunt by taking positions through monitoring each other's movements and coordinating their actions in remarkably complex ways. However, the idea of lions planning the hunt by drawing lines in the sand and indicating with pebbles their respective positions relative to their prey is rather far-fetched. The ability to do this would involve the lions making representations such as: *A is a pebble*, the object of beliefs, such as: *A is a pebble which represents that antelope over there that we could hunt down*. But lions, bees and other animals do not have the metarepresentational capacity (i.e. the capacity to form beliefs about mental representations). That is why they are not capable of reasoning feats which even young children find easy and intuitive, or of the type of symbolic communication that comes naturally to humans. (This account of the role of *metarepresentations* in explaining

culture simplifies greatly. For a more detailed discussion, see articles in Sperber 1996; 2000).

While the metarepresentational capacity provides the basis for explaining our ability to think about our own and other people's minds and for the possibility of symbolic action, the theory of culture needs to explain how particular cultural representations emerge and spread. For example, we ought to be able to give an account of the way small wedge-shaped objects come to be thought of as doorstops, or how a given symbol, such as the expression "special things" in (1), comes to denote different sets of objects in different societies. In a series of publications Dan Sperber (see Sperber 1985, 1996) has developed the idea that explanations in the domain of culture should focus on a particular relation between psychological and ecological influences. On his view, a defining feature of social-cultural things is the relation between forms and structures, which are by and large in the environment of people, and mental representations, which are in individual people's minds/brains. Therefore, cultural categories should be seen as resulting from interactions between *intra*-individual, cognitive-psychological, mechanisms responsible for our ability to interpret the world, and *inter*-individual, social-cultural, mechanisms, such as communication, which enable us to disseminate these representations within and across human populations (see Sperber 1996: 49). On this view, cultures are not natural kinds. Rather, they consist of relatively stable patterns of a particular type of metarepresentation, which I will call *cultural representation*:

Cultural Representation

A metarepresentation which involves a stable three place relation between:

- a mental representation (of a physical entity, event, direct emotional experience, etc.),
- a belief about this mental representation (e.g. hammer, doorstop, love, anger) and
- a sizable population made up of individuals (a nation, an ethnic group, an age group, a professional group, etc.) who share the same, or very similar, beliefs about particular types of mental representations over significant time spans.

Cultural representations emerge and spread through causal chains which involve mental representations and public productions (utterances, texts, pictures, artefacts in the environment of individuals) which are reproduced repeatedly and reasonably faithfully, thus achieving stability and wide distribution, through a process (very sketchily) illustrated in figure 1.

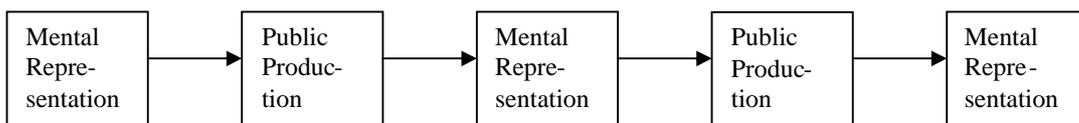


Figure 1: schema of the causal chain involved in the spreading of cultural representations.

This approach is articulated in the context of an analogy between the study of culture and the study of epidemics. Just as there is no epidemic without individual organisms being infected by particular viruses or bacteria, there is no culture without representations being distributed in the brains/minds of individuals. This analogy is very suggestive in several ways. For instance, it is often observed that culture is both an individual and a social construct (see Matsumoto 1996: 18). There is no epidemic without diseased individuals, but the study of epidemics cannot be reduced to the study of individual pathology. By the same token, a culture cannot exist without some cultural representations being in the brains/minds of individuals, but it does not follow that the study of culture can be reduced to the study of individual psychology. Just as infections are in individual people's bodies, mental representations are in their minds/brains. And, just as the spreading of diseases is explained by investigating the interaction between strains of micro-organisms with the environment that they live in, the distribution of cultural representations is explained in terms of communicative, as well as other types of, interaction between people and their environment. From this perspective, the boundaries of a given culture are not any sharper than those of a given epidemic. An epidemic involves a population with many individuals being afflicted to varying degrees by a particular strain of micro-organisms over a continuous time span on a territory with fuzzy and unstable boundaries. And a culture involves a social group (such as a nation, ethnic group, profession, generation, etc.) defined in terms of similar cultural representations held by a significant proportion of the group's members. In other words, people are said to belong in the same culture to the extent that the set of their shared cultural representations is large. This characterization of a culture naturally accommodates the existence of multicultural nations, professions, etc.. It also suggests a straightforward characterization of sub-culture, as a set of cultural representations within a given culture which are shared (mainly) by a subset of its members (e.g. teenagers, members of particular professions, different social classes within a national or ethnic cultural group, and so on).

On this view, individual cultures are epiphenomenal, rather than natural, things which owe their identities to the joint influences of a range of historical, political, economic, and various other factors. Therefore, *intra*-cultural communication could be characterized as communication between participants who share most cultural representations, and *inter*-cultural communication, as communication between participants who share few cultural representations. This raises the following questions: how similar does the shared set of cultural representations of two individuals need to be, for communication between them to be considered *intra*-cultural? And conversely, how small should their shared set of cultural representations be, for communication between them to be considered *inter*-cultural? Plausible answers to these questions can be given in the context of two observations. First, some cultural representations are intuitively more important, or central, than others. This intuition seems to be based on two facts: (a) some cultural representations are more causally efficacious than others in terms of the extent to which they inform the beliefs and guide the actions of those who hold them, and (b) some of the beliefs and actions which are informed by cultural representations pertain to a greater number of spheres of social life than others. Therefore, the *centrality* of a cultural representation could be characterized as follows:

Centrality of a cultural representation

A cultural representation is central to the extent that it is causally efficacious across many spheres of social life.

For example, a system of religious beliefs may influence virtually all aspects of social life, whilst fashions tend to be, not only relatively short-lived, but they may also be confined to relatively isolated social-cultural domains (e.g. how to dress when going to a party). Therefore, cultural proximity/distance is a joint function of the number and the centrality of cultural representations:

Cultural proximity/distance

Two or more individuals/groups are culturally close to the extent that their shared set of cultural representations is large and to the extent that the centrality of these cultural representations is high.

OR:

Two or more individuals/groups are culturally distant to the extent that their shared set of cultural representations is small and to the extent that the centrality of these cultural representations is low.

Clearly, the greater the cultural closeness between people, the more able they will be to make accurate estimates of each other's cognitive resources (e.g. about the contextual assumptions available to other members of the same cultural group), and the better the chances of communicative success between them will be. Thus, in examples (1), (2), (3) and (5) cultural distance played a major role in the communicators' failure to achieve their goals.

Second, the shared cultural knowledge of two or more people may be adequate for communication in some situations, whilst being inadequate for communication in other situations. Therefore, the distinction between *intra-* and *inter-* cultural communication should be relativized to situations of communication:

Situation of intra-cultural communication

A situation of communication in which the cultural distance between the participants is not significant enough to have an adverse effect on communicative success, so it need not be specially accommodated by the participants.

Situation of inter-cultural communication

A situation in which the cultural distance between the participants is significant enough to have an adverse effect on communicative success, unless it is appropriately accommodated by the participants.

This approach has a clear implication for the way in which research in the field of inter-cultural communication might proceed:

- (i) establish the extent to which the intended and the attributed meanings of a given communicative act coincide;
- (ii) find out the similarity between the context in which the communicative act was actually interpreted, and the context intended by the communicator;
- (iii) find out the extent to which cultural representations have contributed to the gap between the actual and the intended context, and
- (iv) assess the impact of those cultural representations on communicative success (taking account of their centrality).

An important methodological aspect of research along these lines is that it is informed by robust intuitions about interpretations of communicative acts and by empirical findings based on evidence from a range of different sources. Note that these findings are independent of, and more reliable than, any of the theoretical concepts which guide the research, so they can provide a reasonably solid basis for testing hypotheses about the impact of culture on communication between participants from particular cultural groups in particular situations.

The importance of this methodological observation is further highlighted by a major difference between cultures and epidemics. Epidemics result from the replication of micro-organisms designed to multiply by producing virtually identical copies of themselves. What needs to be explained are the circumstances in the environment which favour the emergence and the success of strains of micro-organisms which are different from, rather than being identical copies of, their ancestors. In contrast to bacteria and viruses, human brains/minds are designed to transform, rather than to replicate, representations in the normal mode of operation. We generally synthesize information forming new representations on the basis of perceptual inputs from the environment and already held representations. The outputs of such processes are new representations which are more or less similar, rather than identical, to the input ones. For example, reports of what a person has said only exceptionally preserve the exact form of the speaker's original utterance, and back-translation seldom results in a text identical to the source-language original. Only in exceptional circumstances do representations with highly similar forms and contents replicate without significant changes over long time spans, thus becoming part of culture.

This observation has two important consequences for the study of culture. On the one hand, it suggests that cross-cultural similarity is more surprising than cultural diversity. Since people live in vastly different physical environments, we might expect that cultures should differ rather more widely than they actually do. So, the main task for a theory of culture is to explain systematic cross-cultural similarities. On the other hand,

cultural variation is the result of the diverse ecological circumstances in which human populations live. Therefore, it is extremely unlikely that these cultural variations fall in the scope of a general theory. Instead, descriptions and explanations in the social-cultural domain ought to be concerned with the study of the distribution of various cultural categories (e.g. artefacts, genres, art forms, “codes” of behaviour, etc.) in the context of a handful of fairly simple universal cognitive mechanisms and of myriad ecological factors. To give but one example, we are used to thinking of carrots as being of an orangey colour. In fact, the orange carrot is largely a cultural innovation which originated in Holland only several centuries ago, when the Dutch made their national colour the colour of the carrot. Before that time carrots, apparently, used to be of a dark-purplish hue. But this is not sufficient to explain the lasting (cross-)cultural success of this designer vegetable. It seems plausible to assume that our biological disposition to associate some colours, such as orange, with edible things, more readily than others, such as dark-purple, is a universal psychological factor which most likely played an important role in the appeal of orangey carrots to people. Of course, the cross-cultural success of the orange carrot also owes a great deal to other ecological factors, including cultural achievements, such as the advent of fairly effective means of transportation, international travel, and so on. In other words, orangey carrots were successful because they were persistently intuitively perceived as more desirable than their purplish ancestors, and because their production and transportation were relatively economical. This is a general point: successful cultural things are those which preserve an appreciable degree of perceived *relevance* in relatively large human populations over relatively significant time spans. Clearly, the term *relevance* can be used as a measure of (likely) cultural success only provided it is given explicit theoretical content.

4. Relevance in cognition

The stability of representations over time and their geographical distribution owe much to a general functional feature of human cognition: its orientation towards improving the belief system of individuals. If this is indeed a major function of human cognition, then it should be characterized in terms of an efficiency measure, a cost benefit relation of some sort. This is true of any thing that has a function, as the following analogy with purposeful artefacts illustrates:

Efficiency is some measure of benefit divided by cost. The benefit of a pot could be measured as the quantity of water that it holds. Cost can conveniently be measured in equivalent units: the quantity of material of the pot itself. Efficiency might be defined as the volume of water that a pot can hold divided by the volume of material that goes to make the pot itself. (Dawkins, 1996: 7)

Since the function of both communication and cognition is to bring about improvements in individuals’ belief systems, cognitive gain constitutes the benefit side of the equation. As humans have finite cognitive resources and limited time for reasoning, planning and decision making, it seems plausible to assume that processing effort is the cost parameter in this cognitive efficiency measure. Sperber and Wilson (1986/95) call this measure *relevance* and define it as follows:

Relevance

A phenomenon is relevant to an individual:

- (a) to the extent that the cognitive effects achieved when it is processed in context are large, and
- (b) to the extent that the processing effort required for achieving the effects is small.

(adapted from Sperber and Wilson 1986/95: 153)

On this view, the effect-effort ratio is not measured by mapping values on a numerical scale. People's estimates of effect and effort are based on the monitoring of symptomatic physico-chemical changes, and, when they are represented mentally, they take the form of judgements which are intuitive and comparative, rather than consciously calculated and absolute. These intuitive judgments are not merely retrospective but prospective: people have intuitions about how relevant the processing of a phenomenon is likely to be, not merely about how relevant a phenomenon which has been processed has turned out to be (cf. Sperber and Wilson 1986/95: 130-131). This characterization of relevance provides the basis for the following law-like generalization about human cognition:

The Cognitive Principle of Relevance:

Human cognition tends to be geared to the maximization of relevance.

(Sperber and Wilson, 1995a: 260)

The human cognitive system's orientation towards relevance provides one part of the explanation for the emergence and the success of cultural categories, including artefacts. On this approach, a plausible account of the success of the orange carrot might go, roughly, as follows: orangey carrots seemed more edible than purplish ones. Clearly, the assumption that a particular plant is edible generally interacts with other assumptions in more productive ways than the assumption that it is not likely to be edible (e.g. how to include it in various recipes). So, representations of orangey carrots seemed more relevant than those of purplish ones on the cognitive effects side. Moreover, if we assume that the two types of carrot are known to be equally beneficial foods, then representations of orangey carrots, which are more readily (that is, more intuitively) thought of as edible, will seem more relevant on the mental effort side as well: other things being equal, the more desirable a thing looks, the more cognitively salient it will be. And, the more cognitively salient something is, the less processing effort will be required for its mental representation and processing. It is interesting to note that the supremacy of orangey carrots is currently being challenged by research which shows that various types of non-orangey carrots (still grown in some parts of the world) are rich in natural substances which reduce the threat of cancer³. In light of general knowledge about the link between cancer and food, as well as the growing awareness of the increasing incidence of cancer, non-orangey carrots are likely to begin to seem more and more relevant to more and more people, largely as a result of the dissemination of representations of their beneficial properties by means of communication.

5. Relevance in communication

Most of the time a vast range of stimuli impinge on our senses at a fairly high rate. Some of these stimuli pre-empt our attention (e.g. loud noises, flashes of light, etc.), thus creating an expectation that processing them will yield significant cognitive effects. Finally, some attention pre-empting stimuli are designed to create - and to be recognized as designed to create - the expectation that they are worth paying attention to (e.g. a [deliberate] wink, the sound of a door bell, a pointing gesture, an utterance, an unexpected silence or pause in speech, etc.). This last type of stimuli are called *ostensive stimuli*, and as mentioned in section 2, their use in conveying information is called ostensive-inferential communication. To recognize a stimulus as ostensive entitles the addressee to presume that whoever produced it did so because they thought this stimulus was worth paying attention to. Consider the following exchange from Chekhov's play *Three Sisters*:

- (6) Vershinin: ... It's nice living here. But there's one rather strange thing, the station is fifteen miles from the town. And no one knows why.
- Soliony: I know why it is. [*Everyone looks at him*] Because if the station were nearer, it wouldn't be so far away, and as it is so far away, it can't be nearer. [*An awkward silence*]
(Chekhov, *Three Sisters*, Act One)

Soliony's conversational contribution is likely to meet with his interlocutors' disapproval because they have been made to expend gratuitous processing effort. By engaging in communication, Soliony creates the expectation that what he has to say deserves the attention of the others. In other words, he issues a promissory note to the effect that his interlocutors' expectation of cognitive reward will be fulfilled. As his remark is clearly irrelevant, he fails, not merely to fulfil an expectation that his interlocutors happen to have formed, but to honour a promise that he has made.

To sum up: human communication involves the production and interpretation of ostensive stimuli, which make evident the communicator's intention to convey some belief-assumptions. The communicator, by making evident her intention to inform the addressee, effectively issues a kind of promissory note to the effect that the utterance (or other ostensive stimulus) is worth paying attention to. The Cognitive Principle of Relevance makes it possible to spell out the conditions under which this promise has been honoured: an act of communication is worth paying attention to, provided that doing so will lead to the derivation of enough cognitive effects to warrant at least some attention, without gratuitous expenditure of processing effort.

These observations on the role of the Cognitive Principle of Relevance in ostensive-inferential communication are more formally captured by the following generalization, known as the Communicative Principle of Relevance:

Communicative Principle of Relevance:

Every act of ostensive communication communicates a presumption of its own optimal relevance.

(Sperber and Wilson, 1995a: 260)

Presumption of Optimal Relevance:

- (a) The ostensive stimulus is relevant enough for it to be worth the addressee's while to process it.
- (b) The ostensive stimulus is the most relevant one compatible with the communicator's abilities and preferences/goals.

(adapted from Sperber and Wilson, 1995a: 270)

The principle of relevance provides the basis for a production strategy (followed by the communicator) and a comprehension strategy (followed by the addressee):

Relevance-Theoretic Production Strategy

Given your preferences/goals, choose the least effort-demanding option for the hearer.

(taken from Žegarac 2004: 203)

Relevance-Theoretic Comprehension Strategy

- (a) construct interpretations in order of accessibility (i.e. follow a path of least effort)
- (b) stop when your expectation of relevance is satisfied.

(adapted from Carston 2002: 380)

The communicator's choice of signal is guided by two factors: their assumptions about the addressee (the addressee's knowledge and reasoning abilities) and the communicator's own preferences or goals. Thus, in examples (1) to (3) the communicator's poor assessment of the addressee's/audience's cognitive resources (more specifically, the availability and salience of particular contextual assumptions to the addressee/audience) is the cause of miscommunication. In (4) and (5) communicators try to manipulate the addressee/audience by concealing their informative intentions. Overt (i.e. ostensive) communication is a particularly efficient means for spreading representations, precisely because ostensive stimuli are presumed to come from a helpful source: if the addressee can assume that the ostensive stimulus is the best one that the communicator could have chosen in order to convey a particular set of belief-assumptions, they are in a position to narrow their search for cognitive effects. The interpretation (i.e. the set of cognitive effects) which is most salient in the addressee's immediate context, is also the most likely to be optimally relevant. If it is not, the context is suitably adjusted (by discarding some assumptions and introducing others) until enough effects are derived for the communicative act to be found consistent with the

Principle of Relevance (or until processing is abandoned and communication fails). Such adjustments to the context draw freely on the addressee's world knowledge, more technically, their cognitive environment:

Cognitive environment (of an individual)

The set of assumptions that are manifest to an individual at a given time.

(taken from Carston 2002: 376)

Informally, the term 'manifest' means 'salient'. In Relevance Theory, manifestness is defined as follows:

Manifestness (of an assumption to an individual)

The degree to which an individual is capable of mentally representing an assumption and holding it as true or probably true at a given moment.

(taken from Carston 2002: 378)

The concept of cognitive environment is crucial in explaining ostensive-inferential communication, because a person's cognitive environment sets a limit on the contexts which are available to them. The concept of manifestness points to the fact that the cognitive environments of two (or more) people may differ, not only with respect to which assumptions are available to them at a given time, but also in terms of the extent to which they are able to represent them mentally and to use them in mental processing. Therefore, in deciding which ostensive stimulus to use, the communicator needs to assess which contextual assumptions are available to the addressee and how manifest they are to them. These judgements are based on the communicator's presumptions about the participants' shared cognitive environment. More technically, they are based on their mutual cognitive environment:

Mutual cognitive environment

A cognitive environment which is shared by a group of individuals and in which it is manifest to those individuals that they share it.

(taken from Carston 2002: 378)

The notion of mutual cognitive environment is important because it sets a limit on the possibilities of communication, as illustrated in (7):

- (7) **Situation:** Kiki, a mutual acquaintance/friend of Maria's and Peter's, had told Peter in April that Maria would be coming to England in May, and that she was planning to see a few people, including him. She also asked him not to tell Maria that she had informed him of her planned visit. Peter was surprised, but he kept the 'secret'. He did not meet up with Maria in England as he was away on business at the time of her visit. However, unknown to Peter, Kiki disclosed to Maria what she had told him. So, for the next few months, he remained under the impression that Maria was unaware of his knowledge of her visit to England. The following is an excerpt from their chat on the internet in which the assumption that Maria visited England in May, which was already in Peter's and Maria's

shared cognitive environment, became mutually manifest to them:

- [1] Peter: Are you going on holiday for the New Year and Christmas?
[2] Maria: Haven't quite made up my mind yet, but I'm probably going to Barbados to see Sharon and visit some other friends as well.
[3] Peter: Sounds good. Are you planning to visit England again?
[4] Maria: No, I did last June.
[5] Peter: Yeah, when I was in Beijing!
[6] Maria: Yes, when Kiki told you. I almost killed her!

People have clear intuitions about the distinction between assumptions which are mutually manifest (i.e. presumed shared) and those which are merely shared. For example, prior to the exchange in (7) the assumption *Maria visited England in June* was in Peter's and Maria's shared cognitive environment, but it was not in their mutual cognitive environment. Peter's affirmative response, [5], indicates that a previously shared assumption has now become mutually manifest to Maria and to him, and this opened up the possibility of communication on the topic of her visit to England earlier in the year.

It is important to note that the term (mutual) 'manifestness' refers to the psychological disposition for mental representation. In (7), the assumption that Peter and Maria had known all along that Maria had visited England in June, became highly (mutually) manifest to them. Therefore, they represented it mentally, becoming fully conscious of it. However, the mutual cognitive environment that people draw upon in communication largely consists of background assumptions which are presumed shared by all people, or, at least, by all members of a particular community or group. Following Searle (1980), Carston (2002) refers to this set of assumptions as Background (with a capital *B*) and characterizes it as follows:

We might usefully think of Background as a set of assumptions and practices that maintains a fairly steady degree of not very high manifestness, across time, in an individual's cognitive environment. A subset of the Background consists in assumptions/practices which make up the mutual cognitive environment of all (non-pathological) human beings – the deep Background; other subsets are the mutual cognitive environments of what can loosely be termed culturally defined groups of human beings – local Backgrounds.

(Carston 2002: 68)

Background is a useful technical term in that it identifies a subset of the interlocutors' presumed shared beliefs which play an important role in communication. For example, if any of the Background assumptions do not hold, the speaker should indicate this clearly. Failure to do so inevitably goes against the Principle of Relevance. Consider (8):

- (8) Mary: I saw Peter yesterday.

Given our Background knowledge about people, it would not be rational for Mary to say: *I saw Peter yesterday* in order to convey the idea that she saw parts of Peter scattered round the room. According to the Principle of Relevance, the hearer is entitled to treat certain assumptions about the physical properties of people as taken for granted. These Background assumptions are not communicated, because they are already (presumed) held at maximal strength. Therefore, they do not need to be represented consciously in a given situation of communication.

Many cultural representations are an important part of the local (i.e. cultural) Background. They too are generally mutually manifest to the members of particular groups. They can be, and often are, taken for granted in communication between people who presume that they belong in the same culture. These cultural representations tend to be so intuitive to those who hold them that they often appear natural, rather than conventional, so they too are seldom consciously represented. That is why they are typically the loci of miscommunication in situations of inter-cultural communication, which suggests that cross-cultural training should focus primarily on the differences between the trainee's and the host group's local Backgrounds.

In light of these observations, the notions of cognitive environment and mutual cognitive environment can be related to cultural knowledge as follows:

Cultural environment (of an individual)

The set of cultural representations which are manifest to an individual at a given time.

(In other words, the proper subset of an individual's cognitive environment which consists only of cultural representations.)

Mutual cultural environment

A cultural environment which is shared by two or more individuals and in which it is manifest to those individuals that they share it.

(In other words, the proper subset of the mutual cognitive environment of two or more people, which consists only of cultural representations.)

On this view, the cultural environment of an individual is a subset of that individual's cognitive environment, and the mutual cultural environment of two or more people, is a subset of their mutual cognitive environment. The terms *cultural environment* and *mutual cultural environment* are useful because they provide a principled basis for distinguishing between issues relating to context selection in *inter-* and *intra-* cultural communication. Thus, in examples (1), (2), (3) and (5) miscommunication is largely due to the communicators' incorrect estimates of their and the addressee's/audience's mutual cultural environments. Of course, which assumptions will be in the mutual cultural environment of individuals from particular cultures is an empirical matter of the sort that social approaches to pragmatics are concerned with.

In Relevance Theory terms, communication involves the production and the interpretation of evidence of the communicative and the informative intentions. This evidence may be more or less conclusive. The more conclusive the evidence for some

belief-assumptions presented by a communicative act, the more strongly those assumptions are communicated by that act. The Relevance-theoretic notion of communicative *strength* provides the basis for explaining the commonsense notions of *direct* and *indirect* communication. A particular assumption, or set of assumptions, has been communicated directly to the extent that the communicative act presents the addressee with conclusive evidence of the communicator's intention to make that assumption, or set of assumptions, more manifest. And conversely, the less conclusive the evidence of the communicator's intention to communicate a particular assumption, or set of assumptions, is, the more indirectly, i.e. *weakly*, that assumption, or set of assumptions, is communicated. It should be clear that what counts as sufficiently conclusive evidence of a particular communicative (or informative) intention in one culture, may be hopelessly poor evidence of this intention in the context of another. For example, in the situation described in (3), the Japanese participants presumed that pauses in their speech presented sufficiently strong evidence of their communicative intentions to be noticed by the American participant, whilst presenting suitably weak evidence of their informative intention to convey a rejection of the American participant's chosen plan. In Relevance-theory terms, the comprehension of a communicative act which presents less conclusive evidence for a particular informative intention requires more processing effort than one which presents more conclusive evidence for that informative intention. Therefore, a communicator aiming at optimal relevance should always choose the ostensive stimulus which provides the most conclusive evidence of their informative intention. It follows from this, that a communicative act which communicates a particular set of assumptions more weakly than is necessary for communicating that set of assumptions, will prompt the addressee to derive further contextual (i.e. cognitive) effects in order to offset the extra processing effort required for the interpretation. In other words, the addressee will assume that the informative intention is also somewhat different from that which would have been communicated by a more direct communicative act. Thus, the pauses in (3) communicate, not merely the rejection of the American colleague's chosen plan, but also some degree of concern on the part of the communicators for his positive face (see Brown and Levinson, 1987). This suggests that cultural differences in the appropriate degree of (in)directness in communication, such as the one illustrated in (3), receive a natural explanation within the epidemiological approach to culture and the framework of Relevance Theory. The pervasive use of subtle ostensive stimuli within a society depends on the extent to which the mutual cultural environment of its members includes representations about their appropriate use. As Kate Berardo has impressed upon me, such a mutual cultural environment is more likely to be established in a relatively close-knit isolated society, such as Japan, which went through a period of two hundred and fifty years of cultural isolation. In contrast to the Japanese culture, the US culture emerged in a melting pot of diverse cultural influences in which the mutual cultural environment of its members was rather restricted, and this explains why the use of subtle ostensive stimuli, and various forms of communicative indirectness which depend on such stimuli, could not have developed and stabilized in US culture to the same extent as they did in Japan.

6. Conclusion

In this article I have tried to show how Sperber's (1996) epidemiological approach to culture and Sperber and Wilson's (1986/95) Relevance-theoretic account of human communication and cognition jointly provide an intuitive, simple and effective framework for analyzing situations of *inter-cultural* communication. In particular, I have argued that the concept of *mutual cognitive environment* – in effect, a theoretically motivated equivalent of what Goffman ([1964] 1972: 63) termed “an environment of mutual monitoring possibilities” - can be related to culture in a way which brings us closer to an understanding of culture's role in communication.

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NOTES

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2. Of course, whether the denotation of a particular expression, in this case “special things”, is determined culturally or by individual people’s values, attitudes etc. needs to be established on the basis of appropriate (ethnographic) evidence. In the situation described in (1) the evidence, which for space reasons cannot be presented here, strongly supports the view that electrical goods were considered particularly precious in the local culture.
3. See http://www.cals.wisc.edu/media/news/02_00/carrot_pigment.html for more information.

Contact details:

Vladimir Žegarac

Reader in Language and Communication

Department of Language and Communication

Business School

University of Bedfordshire

Vicarage Street

Luton LU1 3JU

Bedfordshire

UK

T +44 (0) 1582 489363

E vladimir.zegarac@beds.ac.uk