The Communicative Wheel: Symptom, Signal and Model in Multimodal Communication

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Abstract:

This paper addresses the need for a model of communication with a new, holistic conception of language within it. The resultant process model is called the *Communicative Wheel*. It consists of three communicative products: the sender's input corresponding to his/her experience of a situation (symptom), an output corresponding to a piece of information to the receiver (signal), and the receiver's intake corresponding to a description of the situation referred to (model). What the model of the wheel suggests, is that the understanding of 'utterance' as *symbolic* needs to be replaced by an understanding of it as *indexical.*

Keywords: input, output, intake; symptom, signal, model; experience, information, situation; precoding, encoding, decoding; gift package, communicative gift.

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1. Introduction

Since its institutional inception, the field of communication study has proposed various models, utilizing different perspectives. Certainly since Shannon (1948), through the media-orientated models of the 1950s (see Cobley 2006, Part 1, Vol. 1), communication models have tended to represent the disciplines whence they emanated (Craig 1999). While there have traditionally been basic S-M-R models, supplemented by gatekeeping, diffusion, effects and audience-centered models of communication, there are also models of communication that focus on economics, norms, biology, systems, cognition, efficiency and so on (Cobley and Schulz 2013a) such that the field harbours an often unrealized potential for dialogue (Craig 2015). More broadly, communication science has been almost exclusively concerned with human communication processes and the settings for those (Cobley and Schulz 2013b); inevitably, then, it has been concerned with language as the principal means of representation and dissemination in communicative acts and this has been the case regardless of which discipline has been attempting to model communication. In what follows, we seek to present a broader conception of the linguistic basis upon which many models of communication have rested. We do this from the standpoint of a linguist and a semiotician striving to present language in communication in holistic terms. We thus incorporate perspectives from linguistics, semiotics, psychology, philosophy, and anthropology in order to explicate the role and influence of (especially idiomatic) language in communication, along with its implication in cognition, rather than citing language as a communicative tool which is employed transparently in specific disciplinary settings (cf. Harmon et al 2015). In doing this, we present a new communication model which, like Schramm's (1954),

comprises a circular diagram. In the face of linear and even rhizomatic models, the circular model stresses the ongoing, repetitive and often self-perpetuating nature of communication. Unlike Schramm's model of communication, however, the communicative wheel aims to conceptualize key moments of punctuation and flow in the process of communication. It seeks to recast communication in both what Craig (1999: 136-40) would call *semiotic* terms, where communication is "a process of signification that mediates subjectivities" and in *phenomenological* terms, where "communication is an experiential encounter of self and other" (Eadie and Goret 2013: 31; cf. Craig 2013). The avowed transportation metaphor in our presentation is not designed to nullify any "cognitive effort" on the part of participants in communication, as Krippendorff's (1993: 7) critique of such metaphors suggests. On the contrary, the phenomenological bearing of the model seeks to emphasize communication's inherent dynamicity and its activization of three obligatory participants whose "cognitive autonomy" (Krippendorf 1993: 17) arises in tandem: the sender, the receiver, and reality itself in the form of a situation (cf. 'action assembly theory' – Greene 1997; Greene and Hall 2013).

1.1. Words and utterances from a linguistic and semiotic point of view

1.1.1. The traditional view: all linguistic entities are symbols

The traditional Saussurean-based view holds that the word is a 'symbolic' sign which consists of an expression unit and a content unit, where the relationship between them is entirely arbitrary (Saussure 1916; for Saussure's theory, see Holdcroft 1991; for the history of arbitrariness, see Lifschitz 2012). The arbitrariness is due to the fact that a word consists of linguistic sound

components, consonants and vowels, which *in themselves* do not have any meaning. These may be combined into a variety of words which all then become symbols (cf. Martinet 1949). These symbols may then be linked according to certain syntactic rules and, when linked, they come to stand for a more complex symbol, called an utterance, with its own expression and its own content (Bühler 1934; for Bühler's theory, see Innis 2013; Wemer & Kaplan 2014). But the view that human language differs from all other communication systems by consisting of simple and complex symbols not only takes in words and utterances – grammemes, i.e. grammatical morphemes such as *a*, *the*, *-s* and *–ed* in English, are also considered to be symbols. This is more or less implicit in all existing linguistic schools, from the various varieties of structuralism (cf. Bloomfield 1935; Hjelmslev 1943; Hockett 1958; Jakobson 1962) to the various linguistic paradigms which come after structuralism (Chomsky 1957; Halliday 1975; Lakoff 1987; Dik 1989; Hengeveld 2004). In Cognitive Linguistics, especially, it is explicit and constitutes a crucial point in itself (cf. Langacker 1999, 2008; Talmy 2001). Although Peirce says that "every word is a symbol. Every utterance is a symbol" (4.447), it is essential to point out that for him a symbol incorporates an index that in itself incorporates an icon. Peirce (2.260, 2.262) sees utterances in general as Dicents: one example is the Dicent Indexical Legisign (such as a street cry); another is the Dicent Symbolic Legisign (2.264), such as a proposition. Thus Peirce distinguishes between arbitrariness and convention (2.341), also attributes properties to the utterance which are not solely symbolic and concludes that the utterance is a sign that is "really affected by its object" (2.262).

The specific construction described above renders human language as a unique 'communication tool'; yet this traditional view has its clear limitations. For instance, in itself it does not enable a conception of language as embodied in human being, even while it points to properties that are not present in the communication of non-human animals. In the mere definition

of the word as a symbol the human body or the human brain are not foregrounded. The word is thus defined completely intrinsically with no connections to the users of the language and their interaction with the surrounding world (for a discussion of this, see Sun 2000; Vogt 2002; Taddeo & Floridi 2005). Moreover, when language features in any communication identified on the basis of the sender's transfer of a message to the receiver in a certain setting and context, it makes no sense to argue that an utterance is a complex symbol. A symbol, in the traditional conception that is invoked when words are so described, is a static entity. It does not move and cannot move by itself. At this level of thinking, all words are symbols and therefore have to be learnt by heart one by one by the child (cf. Kany & Schröler 2014; Hoff 2009: 169f). As such, words have a life outside communication and are found, for example, in dictionaries, where they live a quiet life until somebody uses them. Yet, even taking this scenario seriously, then *utterances* cannot live a life outside communication (cf. Durst-Andersen 2008, 2009; cf. Harris 2009). If an utterance were to be taken, say, as a complex symbol consisting of simple symbols, then a child would have to learn all possible utterances by heart in order to be able to reproduce them later on in concrete communication situations. Of course, this completely contradicts common sense and completely undermines what is normally referred to as the *productivity of language*: thanks to grammar, a language can give expression to any old and any new thought, and they can all be understood by the hearer, if he or she is in a position to master the conditions, the context and the myriad inflections of the language in question. Hearers need not have previously heard a specific utterance in order to produce that utterance and to understand it (cf. Hockett 1963; Jakobson 1968; Lyons 1977: 76; for a general discussion, see Baggio et al. 2012).

1.1.2. The new view 1: symbols have two contents

Let us consider the understanding of 'symbol' that arises from Peirce's sign triad. For Peirce, the sign has an expression unit, called a *representamen*, which is coupled to two other units, called *object* and *interpretant*, respectively (cf. Peirce 1953). For the purposes of exposition, it can be argued that part of the Peircean *object* is akin to an *image* (the object has other aspects for Peirce, but let us suspend those for the moment) and his *interpretant* corresponds to *idea* (ditto, re. suspension, for the interpretant) (cf. Durst-Andersen 2009). Bearing this in mind with reference to the human sign, each is a different kind of 'content' with its own important link to the human being. From this point of view, a word amounts to an 'image-idea pair'. The image (object), even in its most abstract bearing, is the 'sensuous' content of the word – it cannot help but be linked to the senses of the human body; while an idea is the mental content of the word – not unconnected to the senses, but nevertheless geared towards a more identificatory or descriptive rather than sensory process in the human brain (see Figure 1).

INSERT FIGURE 1

The expression *rice pudding* (linked to the sense of hearing originally), for example, will not only mediate an idea (which involves descriptors such as Artefact, Food, Mush, Dish, etc.) and a visual image (giving, for instance, appearance, form, dimension and colour), but certainly also involve an olfactory, a gustatory and perhaps even an autonomous somatosensory image, almost as if a person was apprehending "rice pudding" through the senses. Without assuming the existence of these images it is difficult to explain how and why people are capable of recognizing "rice pudding"

when smelling it, tasting it and touching it without looking at it, or even being told beforehand that it will be present. It is important to note that the image/object plays a crucial role in associative processes and to acknowledge that we are considering an issue related to, but somewhat more primal, than those of 'action assembly theory' (Greene 1989). So, if you see "rice pudding" in a picture, this will not only provoke the idea of that dish, but also some (admittedly moderate) connection to the taste or smell of it. Try thinking of any desirable foodstuff when you are hungry to gain an impression of the point made here. The existence of these associative links is one reason why companies are willing to pay huge sums for commercials.

In this way, language can be said to mediate perception and cognition (cf. Durst-Andersen 2011, 2012). Unlike the ideational content of a lexeme which has only one mental representation (consisting, however, of several descriptors, viz. Category, Function, Subfunction, Location, Means, Object, etc.), the image content has several representations, but the two contents are linked to the expression unit or mediated by the expression unit. All three components comprise a network and, as a word and being part of a person, that network amounts to what is called an *engram* in neuropsychology (cf. Semon 1921; for its present status, see Bruce 2001; Dudai 2004; Josselyn 2010): that point where all traces of the memory of feelings, activities and thoughts are stored.

How does this view differ from traditional perspectives on words? The trichotomic view represents a departure in that it offers a means to consider human being and establishes a connection between the human body and the human brain. When a child learns the meaning of *rice pudding*, it is likely that it will first learn the image content and only later the idea content (corresponding to what is traditionally called *emotions* and *thoughts* in psychology and related disciplines, cf. Solomon 2004; Nussbaum 2001). One might say that the image content will form the input, its experience of "rice pudding" for the child, while the idea content will form its intake, its more

profound understanding of "rice pudding" being a certain kind of food. The order of acquisition is crucial. Yet, also from the point of view of language itself, the trichotomic view is very different from the dichotomic one: we will argue that the arbitrariness exists between the expression and its image content, but certainly not between the expression and its idea content – here the relation is well motivated (see also Panther 2013). That is why "rice pudding" is called *rice pudding* in English, a sort of "pudding" made from "rice". As such, arbitrariness and convention (as suggested by Peirce, cf. above) should be kept strictly apart which they have not been so far. The conventional side or law-like aspect of language should be understood in a broader way than arbitrariness, since it concerns not two sides, but all three sides of the sign symbol. That specific expression units are linked to specific images as well as specific ideas in a specific language community is due to convention. So when it is argued that members of a language community share a code, it actually means from the point of view of the verbal repertoire that they share identical engrams: the use of a word in a communication situation means that the same button is pressed and thereby the same neurophysiological network is automatically activated. The identical or almost identical network is extremely important, because it underlines the so-called *binding effect of language*: not only does it bind the two participants in a communication situation, but it also binds the members of a society speaking the same language. The former was questioned by Luhmann (1995) who stressed the distance-creating effect of language, the latter by Habermas (2012) who used Bühler's three language functions to show its conflict-creating effect.

1.1.3. The new view 2: an utterance involves three indexes

If a sentence/utterance is not the kind of sign that is a symbol, then what is it? In one formulation, Peirce (1953) distinguishes three kinds of signs at the level of their relation to their object, viz. icons, indexes, and symbols. Only indexes have a relation of causality inhering in themselves: if you see a red light in a street, you will probably stop; if you see a green light, you will probably start to move; if you see some smoke, it is likely you will immediately look for the fire; if you hear the utterance "*There is a free parking space between the green van and the white Buick just 200 yards in front of you*", you may drive 200 yards at once and use this utterance as a model to find what you need. From this, one can conclude that while words are symbols in Peirce's terminology, attached to their objects and interpretants according to law or convention, then *grammemes*, i.e. the *grammatical* valencies attached to words, must be indexes. This explains why words are static when they stand alone, i.e. live as only dictionary units, supported only by convention, but automatically turn into dynamic units when they become part of an utterance in which words have grammatical prefixes or suffixes. When a word is alone – for example, *rice pudding*, it is *impotent* and its powers of reference are very limited; but together with grammemes – for example, "What a rice pudding!", it becomes *omnipotent* by comparison. The word becomes both open-ended in its import as well as directly signified.

Thus we argue that an utterance is not automatically a symbol, but has a predominantly indexical character. Later we shall argue that an utterance, as such, incorporates not one, but three different kinds of indexes: one that points at the sender, called a *symptom*, another that points at the receiver, called a *signal*, and a third one that points at a situation in reality, called a *model* (cf. Durst-Andersen 2011: 151ff). This means that an utterance is inherently a communicative unit – it cannot do otherwise than communicate in the sense that it has a strong frame of reference. One might say that the existence of three obligatory participants each with its own voice makes

communication something that is inherently characterized by polyvocality (cf. Bakhtin 1994 [1929]). The dynamism of the communication situation is, however, not only due to the different perspectives involved in the three types of indexes: symptoms have a first person perspective, signals a second person perspective, and models a third person perspective. Their dynamism is also due to their different time orientations: symptoms go back in time, signals go forward in time, and models are potentially timeless and therefore applicable to all times. Hence, Hippocrates was able to recognize all three in the service of diagnosis and prognosis. Together in the sphere of words, all three can be said to transform a sentence into an utterance involving a story-telling motion picture with a beginning, a middle, and an end.

1.2. Reality and its place in communication science

1.2.1. Discussing reality's existence in the communication situation and in the human mind

Traditionally, in philosophy of science, a clear distinction is made between *realists* and *idealists*. This discussion is deemed irrelevant for much of communication science, since communication takes place between two participants, a sender and a receiver and, although it may concern external reality, the situations referred to are, strictly, never touched by language. Messages go from the sender to the receiver and back again, but they do not directly impinge on the situation in external reality that obtains at the moment of communication. The situation is typically an entity in the sender's mind and in the receiver's mind, as evinced by Jakobson's (1960) definition of it as

"understood" by sender and receiver. By contrast, we rather think that the discussion of reality's existence in communication processes should be approached in a different manner.

First, if we look at the conventional S-M-R (sender-message-receiver) view of communication, it is agreed that a communication situation always involves three obligatory participants: a sender, a receiver, and something to which the message refers (e.g. a 'reality'). But in a communication situation the 'reality' is ambiguous. It manifests itself in three different ways:

- the situation in the reality common to the sender as well as the receiver;
- the sender's experience of that situation; and
- the receiver's experience.

Secondly, when human beings process visual stimuli, it seems to happen in three steps (see Figure 2), following Piaget's classification of *identification*, *assimilation* and *accommodation* as the cognitive functions applied to the three stages (Piaget 1954; Piaget & Inhelder 1966). To argue that the processing of visual stimuli has three stages is tantamount to saying that reality exists in three modalities in our human brain. Let us take an illustrative example.

INSERT FIGURE 2

Julia comes into her office and immediately sees a note on her desk that was not there when she left her office. The note on her desk is a 'stable' picture corresponding to a visual experience of a state which consists of a figure, a note, against a ground, her desk. This state functions as input. Her visual experience is, however, not identical to her understanding. Knowing that the state is

new, she will automatically infer that somebody produced an activity which caused this state to appear. In other words, she understands that a successful action, an event, took place. This is her intake. Now Julia has a visual experience of reality as well as a conceptually-based understanding of reality – she has an input as well as an intake. But the story does not stop here. Julia will store what she experienced and what she understood. She will store the state as a 'stable' picture, because she saw a 'stable' picture – there was no 'unstable' picture, because she did not witness the activity of it being moved to the place on her desk. Moreover, she will store her understanding in propositional-semantic terms, i.e. as a thought. We shall call reality's third way of existence in the human brain 'outcome' which is a combination of the experience-based input and the comprehension-based intake (see also Durst-Andersen 2012).

These three steps are usually referred to as *sensory memory, working memory* and *long term memory* by psychologists (cf. Atkinson & Schiffrin 1968; see also Cowan 2008; Schweppe & Rummer 2014). Thus, in principle there is nothing substantially new in the scenario outlined above. But, for our purposes, we name them in terms of their products:

- the input is the cognitive product of identification and this is handled by sensory memory;
- the intake is the cognitive product of assimilation and this is handled by working memory; and
- the outcome is the cognitive product of accommodation and this is handled by long term memory.

We shall argue that the three processing steps with their three cognitive products are directly related to how human beings communicate with one another through language. In our case it must be

emphasized that we shall focus entirely on British English, since we cannot exclude that other varieties of English may work slightly differently due to different conventions.

1.2.2. Reality exists in three modalities

Reality, in the above scenario and in communicative situations, does not exist as an omnipresent objective sphere of existence. Rather, it exists in three modalities. Moreover, there are obvious correlations between the three stages any visual stimulus goes through in the human mind and the three obligatory participants in a communication situation. The input stage and the sender share the notion of experience. The intake stage and reality share the notion of situation, be that a state, an activity, an event (a state caused by an activity), or a process (an activity intended to cause a state) (cf. von Wright 1974). Although the outcome stage and the receiver do not seem to have anything in common, they do share something: the condensed synthesis of the input and the intake. This is the *outcome*: in the same way a piece of new or old information to the receiver is a condensation of the sender's experience of a situation compared to that of the receiver.

If human beings process visual (as well as olfactory, gustatory and somatosensory) stimuli in these three broad steps, it could be the case that people also communicate by using the same three steps. Their order, however, cannot be identical, because communication stereotypically ends with the cognitive process 'understanding' and not simply the complete storage of the sender's experience and his/her understanding. Nevertheless, the way we store information as a combination of experience and thought, seems to match the way language is built up: by images (Peircean

objects in the dimension of experience) and by ideas (Peircean interpretants, thoughts provoked by the sign relation), as well as the situation, apprehended by no means in its entirety by sender and receiver but through the indicators of mere qualities in expression units (Peircean representamens). Provided these parallels exist, communication must consist of three steps and three products. If this proves to be the case, then it will be far easier to describe and explain how the sender's speech production and the receiver's speech reception fit ordinary cognitive processes going on in our brain as well as sensory processes going on in our body through the brain (cf. Solomon 2004; Nussbaum 2001).

1.3. Communication as gift exchange

Non-verbal communication in humans, differs profoundly, we would argue, from ordinary verbal communication (see, for instance, Kendon 1995, 2014; McNeill 1992). Nevertheless, we would hold that non-verbal communication has qualities that carry over to, and inform, verbal communication. Both involve symptoms, signals and models. What differentiates them is that non-verbal communication is not based on symbols, whereas symbols, in the shape of words, have a central role to play in verbal communication.

Non-verbal communication such as *distress signals* or *handshakes* are strongly performative (Austin 1961; Searle 1969): the sender tries to set in train an action by 'constating' it to the receiver. In order to produce a perlocution, the receiver has to recognize and accept the illocutionary force of the communication. By way of the perlocution the world is either changed (there is a response to the distress call) or, by failure to grasp the illocutionary force, it remains the same (the receiver

is scared off by the distress call). Non-verbal communication does not involve elements that match the function of words in verbal communication and it is for this reason that previous attempts to propose a 'grammar' of gestures or postures have been futile. Non-verbal communication is not built upon independent and discrete symbols, a fact recognized by early scientific investigators into animal communication who were able to establish that non-human animals communicated by way of messages, strings of signs, rather than individual signs (Marler 1961: 312). Furthermore, non-verbal communication is bound not by convention alone but by context and situation, so it tends to be composed of indexes and icons (which may, later, become formalized into symbols, especially through habit). To be able to process non-verbal communication thoroughly, receivers need a pragmatic orientation, a form of problem solving, as in the response of reaching for the cat food when the family feline rubs its flank against your leg, an interaction that also gains with habit.

Verbal communication may, of course, involve problem solving. Yet it does so by proposing a solution in a declarative (e.g., *You can put the bag in my room*), by solving it directly by using an imperative (e.g., *Put the bag in my room, please!*), or by stating a problem by using a question (*Could you put the bag in my room?*). Quotidian communication should be compared to a particular kind of gift giving or gift exchange based on the principle of reciprocity (cf. Mauss 1925; see also Sherry 1983; Osteen 2002; Adloff 2016). However, unlike gift exchange where the donor may put the gift directly in the hands of the receiver, the sender cannot give the receiver the "communicative gift" directly – the gift has to be wrapped in a gift package which has to be unwrapped by the receiver. And just like a gift package contains a hidden gift, a verbal gift package (a message) contains the purport which is also hidden. Non-verbal communication seems to lack this wrapping element – it often seems direct in its indexical bearing. It goes without saying, that in order to get access to what Goffman (1959) called *expressions given* (deliberately communicated information)

and *expressions given off* (involuntary expressive behavior that gives the receiver information about the sender) investigation of communication must involve both verbal and non-verbal communication. Here we shall concentrate solely on verbal communication.

For the inventor of modern gift-giving theory, Mauss (1925), giving, taking and reprocating were considered to reproduce society. At the same time, the gift was not seen as an inanimate object. After the donor has handed the object over to the receiver, it is still part of the donor and as such the donor has power over the receiver through the gift. In this way, the gift is simultaneously given and kept, because it retains the inalienable property of the donor who transfers only possession of it. A gift is a symptom of freedom, but also a signal to give a counter-gift, and in this way gift-giving establishes a kind of social contract (cf. Osteen 2002). We see a lot of similarities between gift-giving and verbal communication, and just as anthropologists and philosophers are investigating the invisible gap between giving and responding (for its research history, see Adloff 2016), we want to investigate the more or less invisible gap between the sender's speech intention and the receiver's interpretation of it and his response. In doing that we focus on *tacit knowledge* that manifests in the practical knowledge of *how* something is done (cf. Polanyi 1958: 4) and views communication as a kind of cooperation.

2. Stating the problems to be solved

2.1. Discussing the cab scenario

Let us illustrate some of the fundamental problems with existing communication process models by taking our starting point in the following scenario.

Scenario 1

Sandra catches a cab just outside her apartment that is going to take her to the final interview at what could become her new job. She is reading some important documents relevant for the interview. Suddenly the cab stops. She notices it, but thinks that it stopped because of a red light. Since the cab does not move for quite some time, she looks up and realizes that the cab is placed in the middle of a traffic jam. She looks at her watch and gets nervous: if the traffic jam is not resolved in a couple of minutes, she will be late for the interview. She feels that she is trapped in the cab and she feels that she cannot do anything about it despite the fact that she wants to. It takes quite some time to resolve the traffic jam and she is late for the interview. When Sandra enters the meeting room, she says: *Sorry for the delay. I got trapped in a cab*. The CEO nods and accepts her apology for turning up late because she had been sitting in a cab that, for reasons beyond her control, was trapped in a traffic jam.

If we concentrate on the utterance, *I got trapped in a cab*, it contains what we shall call a 'communicative paradox'. The receiver's understanding of the utterance, his intake, "She was sitting in a cab that, for reasons beyond her control, was trapped in a traffic jam", is not easily arrived at through the output, the message itself as a string of symbols. In the message as it should be taken, "sitting" or "traffic jam" are not mentioned at all. There is a missing link which delivers the intake to the heart of the utterance. Nevertheless, there is a consensus regarding

- the intake, the receiver's communicative product which finalizes the communicative event, and

- the output, the communicative product which serves as the mediating link between the sender, Sandra, and the receiver, the CEO.

By securing the latter they appear to have a 'common voice'. In traditional models of communication (for example, Jakobson 1960), such a common voice is usually labeled a 'code', often reifying the process to create the impression that the sender and receiver have joint access to a set of one-to-one or this-means-that rules, such as 'The Highway Code', to which sender and receiver must adhere. We propose that what is usually referred to as 'code' is divided into three subcodes: one on the part of the sender, responsible for the input; one which is responsible for the output constituting the sender's and receiver's common voice, which we call the modulator; and the one which is responsible for the receiver's intake.

Thus, the sender also made her own contribution to the communicative event, just like the receiver; but, since it is neither the communicative product nor the receiver that decides how to name the situation referred to, it must be the sender who alone is responsible for choosing the wording. The way Sandra named the situation, *I got trapped in a cab*, suggests that she actually did not name the situation itself in which "the cab she was sitting in was stuck in a traffic jam", but uttered her experience of that situation: she felt that she was caught in the cab, but she also felt that she could not do anything about it despite really wanting to punctually arrive at her important appointment. What this suggests is that the sender makes his/her contribution in the form of a description of his/her *own experience* of a situation with which s/he is confronted. This is the sender's 'input'. In that way we get three contributions from three communicative participants, i.e.

(1) the sender's input; (2) the modulator's output, i.e. the common voice shared by the sender and the receiver; and (3) the receiver's intake.

As we have stated, 'the situation' is often taken to be the third active participant besides the sender and the receiver, but since the key thing here is the way in which the sender and the receiver have agreed to talk about situations in reality – called the 'common voice' – it cannot be the situation itself that participates in communication and anchors the communicative product. The situation is indeed present, but only before the sender's input and after the receiver's intake. Strictly, it is not omnipresent as either a backdrop or perfusing the message. The situation (the communicative gift) cannot be carried directly by the sender to the receiver; it has to be prewrapped in the sender's mental universe, then the sender's experience of the situation has to be wrapped into pieces of information designed specifically for the given receiver, and, finally, the receiver has to unwrap the whole message package in exactly the opposite order to begin to encounter the situation. Yet, unlike the sender who actually was physically present in the situation referred to, the receiver will never be able to physically get access to that situation; the receiver's encounter with the situation will be psychological, through her/his mental models (cf. Johnson-Laird 1983). This is the essential difference between gift giving and verbal communication: you can give a gift to a receiver without wrapping it in paper, but you simply cannot give a communicative gift directly without wrapping it. And the important thing is that we are talking about wrapping it, not once, but twice: *prewrapping* from the point of view of the sender and *wrapping* from the point of view of the receiver.

2.2. Discussing the murder scenario

Let us take another example to illustrate the paradox of situation in communication (see below).

Scenario 2

A young girl, Maria, has been brutally killed in a cellar in a small town. The story is in every news media outlet. The day after the murder a white male who lived in the same building where Maria was killed is taken to prison by the local police who are convinced that she was killed by him. This impression is shared by the media and then the public. In short, there is a consensus that the actual killer has been found. A DNA test is taken. When the result of this test is revealed after some time, it turns out that the person is innocent. When the news about this is broadcasted on the local television station, the broadcaster begins the story by saying: *Maria's murderer was innocent*. For viewers/listeners, there was immediate understanding that "the person we believed to be Maria's murderer has been found to be innocent of that murder".

As suggested above, the utterance *Maria's murderer was innocent* will normally mean that "The person we believed to be Maria's murderer has been found to be innocent of that murder". This is the receiver's intake; but this intake has very little to do with the actual utterance, the output, in which the person is named *Maria's murderer* – although he did not kill her as the DNA analysis showed. The distance between what the message explicitly says – and the receiver's intake is even bigger in this case compared to the cab-scenario. But the paradox remains the same: how is it possible to explain that the sender says one thing, but the receiver understands it in another way? Why did the sender name the person *Maria's murderer*, although in the same utterance consisting of four words the newscaster presents the receiver with an opportunity that allows both of them to

deny that to be the case. Of course, the newscaster, and with him many others who knew about the murder case, believed that prior to the DNA report the person to whom they were referring was "Maria's murderer". In that case, the sender's input would be *Maria's murderer IS innocent.* This is a combination of the sender's belief and what he learnt from the DNA report released by the police. Both belong to the mental universe of the sender. But how can we explain that the actual utterance, the output, involves the past tense form *was*?

The use of the past tense seems to be strange in view of the fact that it is an important piece of new information and, moreover, the utterance unambiguously refers to the present world. The only way in which we can explain the use of the past tense is by assuming that the sender's input has been framed for the receiver as a signal in order for him to change his present world of beliefs by putting *Maria's murderer is caught* into his past world of beliefs where it rightly belongs. Having received the signal through the output and having acted accordingly, the receiver is now able to anchor the information in a situation in reality. This is done by finding the mental model corresponding to the situation in question. By doing that, the receiver arrives at the intake, "The person we believed to be Maria's murderer is found innocent of that murder". Yet, as can be seen, there is still a residue of past experience – the speaker's past world of beliefs – that lingers, both for the sender and the receiver to be able to decode the contradiction, "innocent murderer". Again, the situation is bracketed from the communication in favour of the image-idea pair in the human sign.

2.3. Discussing what is common to both scenarios

The examination of the two scenarios reveals another serious problem that has to be solved by a communication process model. This might be called the 'communicability mystery'. It is the object of the question: "How is it possible under these circumstances to communicate at all?" In all existing communication process models as well as in our description above, there is no direct contact between the sender and the receiver besides the message or the utterance itself, the output that is common to the sender and the receiver. We must, however, assume that the sender starts at one place and that the receiver ends at a place that is very similar. In the face of widespread miscommunication and skepticism regarding the telementational success of verbal communication, how can we explain those communicative events that seem to have been successful? If one could find the precise contact point or meeting place of sender and receiver, we would be able to say that the communicative circuit had been completed.

The output is certainly common to the sender and the receiver; but what we seriously lack is a link from the receiver to the sender: not 'feedback', which is temporally second, but something that is directed at the sender simultaneously. If we can find that point where "the ends meet", we can gain insight into how the sender's starting point coincides with the sender's end point. In that way, it would be possible to argue that the receiver has a chance to 'test' his/her understanding with the sender's 'intended' meaning, the *purport of the sender's message* (cf. Leech 1983).

3. Introducing a new communication process model

3.0. The communication process as a journey

In the following, we shall try to put the observations above into a more formalized model which is a strongly revised version of Bühler's organon model made dynamic, open and reapplicable (see Figure 3).

INSERT FIGURE 3

The communication process is thought of as a journey where the sender travels from the departure station, Station 0, through Station 1 in order to deliver the message to the receiver at Station 2. The receiver gets the message and takes the train to Station 3, which is identical to Station 0. Let us be more precise and more detailed in our description. The point is that when in scenario 1 our sender said *Sorry for my delay. I was trapped in a cab* she said it at Station 2, but what she said was actually pre-coded when she arrived at Station 1.

The sender is situated in the external world. She realizes that "the cab she is sitting in is placed in the middle of a traffic jam". This is the sender's own understanding of the situation, her own intake arrived at by looking at a stable picture depicting the present state, "traffic jam", which she infers must be the effect of hitherto unrevealed general transport problems. When the sender entered the meeting room, she wanted to give the CEO the description of her predicament, because this is the purport of her message – the experiential part of the image-ideas that she puts into use. One might say that the situation, wrapped in an experiential image-idea, is her personal 'gift' to the CEO. But her experience of the situation and the image-idea are also wrapped into a message according to some conventional rules, i.e. according to the way in which the sender and the receiver have tacitly agreed to render situations in reality. However, before activating this 'modulator' or 'common voice', the sender uses her own voice by naming her personal experience of the situation

that occurred. This can be described in the following way in the Communicative Wheel (see Figure 3).

3.1. Going from Station 0 to Station 1

When going from Station 0 to Station 1 the sender compares the external world, "the cab I am sitting in is placed in the middle of a traffic jam", to her own internal world, in this case her world of feelings. The result of this comparison is her personal input to the communication process, *I am trapped in this cab and I cannot do anything about it although I want to*. Other people in the same situation might have named it otherwise, e.g., *I am stuck in this cab* or *I am caught in this cab*. What people name is their own choice and it is not determined by language as such – it is the constraints and affordances that are defined by language. Seen from a semiotic point of view, the input is a *symptom* of the sender's experiences in both the broad and figurative sense of the term, but also in the indexical sense, having roots in the body. So what she named was the effect that the situation had on her feelings. In other words, when the sender arrives at Station 1, she has given her input to communication by investing or 'precoding' a symptom with the form of her own naming. Being at Station 1, the 'situation medium' has given way to the medium of experience. Put in another way, the first part of the journey could be conceived as one from the external world to the internal world of the sender. This is important. Now she leaves Station 1 with her prewrapped gift (see Fig. 3).

3.2. Going from Station 1 to Station 2

When going from Station 1 to Station 2 the sender is involved in a process whereby her own internal world will be somehow related to the receiver's. This means that what she has in her past store of experiences, knowledge, opinions and beliefs is offered for interaction with the corresponding stores of the receiver. This may feel like an automatic process learnt gradually when acquiring the mother tongue with all its idioms and idiosyncrasies, along with a whole range of personal and cultural attitudes commonly felt as being 'in the blood'. The result of this comparison or interaction will be a piece of information with certain degrees of familiarity or unfamiliarity depending on the coinciding of the sender and receiver in interaction. Here the sender frames what has already been named. This means that the naming part becomes covert, i.e. presupposed by the framing part.

In short, the sender presents her internal world in anticipation of the receiver coinciding with it; of course, the result is not guaranteed. Station 2 is a new medium: that of information. If, for instance, the sender's experience is identical to the receiver's experience, then it can be said that Station 2 is the site of old information. Usually, certain linguistic constructions can indicate or place senders and receivers on the same terrain: the definite article, *the*, for example, can work in this way. The indefinite article, *a*, tends to indicate that there is no coinciding of sender and receiver and that they are meeting in the territory of new information to the receiver. In order for new or old information to be correctly placed in the receiver's internal world, in his mind, the sender will also signal whether it hails from the present store or the past store of experience. In other words, *I got trapped in a cab* is the way in which her named experience, *I am trapped in the cab*, is framed specifically for the consumption of the CEO, the specific receiver of the message. It functions as the output of the way in which the sender and the receiver have tacitly agreed to render situations in reality. One might say that it is the sender's and the receiver's 'common voice', or their

modulator. In short, the prewrapped gift has been finally wrapped for the specific receiver of the gift and has been delivered to that specific receiver. The sender remains at Station 2, ready to receive a counter gift from the receiver in his potentially future role as sender (see Fig. 3).

3.3. Going from Station 2 to Station 3

What the sender delivers at Station 2 has to be unwrapped. Between Station 0 and Station 1 the sender prewrapped the gift with materials designed to protect it and enable delivery. Between Station 1 and Station 2 she wrapped the gift in decorative paper specifically chosen in anticipation that the receiver would be able to divine the nature of the gift and the portion of her experience that is invested in it. When the old or new pieces of information are delivered to the receiver, the receiver leaves Station 2 in order to get to Station 3, but he will do it by mentally reconstructing the journey made by the sender.

The receiver's signal from the sender is to reconstruct the sender's symptom, ultimately in his own body. If sender and receiver are coinciding, he knows that at the end of a signal is a symptom which at the same time has an attached model of the real situation referred to by the utterance. He cannot get access to the real situation but, through a model of it, he will understand the kind of situation that is being talked about.

At the level of simple decoding, the answer to the question *What caused her feeling of entrapment* is sought. The answer is "The cab she was sitting in was stuck in a traffic jam and she was rendered helpless". This is the receiver's intake, his understanding of the utterance – whether he believes the sender is being sincere or not. So, even at this level, the gift that was prewrapped

and wrapped finally in decorative paper by the sender can be obtained by first unwrapping the decorative paper and then the protective inner wrapping. In doing this, the receiver arrives with his gift at Station 3 which appears to be identical to Station 0, the sender's departure station. In this way the receiver anchors the information in a situation and now has an understanding of the "hidden" message, its purport. Of course, the item placed in the gift wrapping between Stations 1 and 2 is not 'identical' to the gift that is with the receiver at Station 3. This is because of the different experience stores or the differences in 'innenwelt' (Uexküll 1921) of the sender and receiver.

The following point is vitally important: the receiver is now ready to take a new tour. This may, in principle, continue in perpetuity, even if it does not in reality. The receiver becomes sender by taking a step down and by making a new tour of the communicative wheel, while the sender becomes receiver by remaining at Station 2 ready to unwrap a gift package from his previous receiver. This is what Peirce (2.303, 2.92, 5.284) described as a kind of 'infinite semiosis' (see Figure 4). Sender and receiver are caught up, therefore, in the potential for infinite semiosis but, in practice, interrupt this potentiality with the invariant expedient of the 'common voice'.

INSERT FIGURE 4

4. Conclusion

What the wheel seeks to demonstrate – in the case of the present paper, through focus on the verbal part of two interactions – is that the process of communication automatically sets up access to the internal world of the sender and the receiver. As such, it confirms common sense understandings of communication as a process that 'actually works' in bringing two minds together, although it

does so with important semiotic qualifications. An utterance cannot but communicate, because the utterance is not a symbol removed from the body of the communication participants and the situation referred to, but a major index consisting of three indexes that are causally related to the body of the sender, to the receiver and to the world: the direction of the symptom goes from the sender to the situation referred to, the direction of the signal goes from the sender to the receiver and the direction of the model goes from the receiver to the situation. In that way a dynamical semiotic chain is created which shows that behind a signal one always finds a symptom and behind a symptom one always finds a model (see Figure 5, where the impact of the signal for the receiver is the focus).

INSERT FIGURE 5

Many models of communication imply that mediation is so extensive in communicative interactions that it prevents the meeting of two minds. On the other hand, what often gets lost in accounts of communication that tend toward a telementational perspective, suggesting the sender and the receiver do get into almost untrammelled contact with one another, is the empathetic dimension: the transfer of experience. Seen in these latter terms, the new model appears to offer new insights for folk psychology or Theory of Mind. In the latter version of this idea, the child starts to infer the intentions of others, including false beliefs, round the age of three and a half (Wimmer and Perner 1983) – a process described sometimes as if it is an almost 'magical' event and as if nothing had gone before. Yet, if children have begun to evaluate utterances according to the view of communication we have outlined here, then they are already engaged – at the least – in a prototypical form of empathy, as well as trading in beliefs and feelings.

A further consequence of the indexical bearing of utterances is felt in the conceptualization of the *situation* of communication. The real states, activities, events, and processes that surround us and make up what is traditionally called reality are not held at bay by utterances. It is easy to assume that they are so held when proceeding from a conception of the word as purely symbolic. Yet, when the utterance is revealed as an index, it turns out that the communicative gift, the purport of a message wrapped in the English language, is a situation. This means that the sender starts in the external world by choosing a situation that s/he finds worth packaging into a message and that the receiver ends in that situation after having unwrapped the gift package, the message. It goes without saying that a situation need not be in the real world; it might be in an imagined world. The key thing is that sender's experience or the information to the receiver could have been alternative gifts, but in British English they appear to reflect various stages of the gift packaging process.

Nevertheless, we must remain wary of the idea that single utterances or instances of communication will always be either 'true' or reveal 'intent'. What we have called *output* is often figured as the *message*. This can be ambiguous in English for while 'message' is usually taken as the 'utterance itself' with its specific, analyzable, content and form, it can also signify a phenomenon imbued with 'intent' ("Do you get the message?"). Yet the purport of the message – the sender's gift to the receiver – is not the same as the full paraphernalia of the gift package. This latter contains 'content' plus two expression units with their own 'content': the sender's experience and the information for the receiver. The isolation of the purport of the message (i.e. the sender's gift to the receiver) from the message itself (i.e. the gift package) is the main and crucial difference between Shannon's mathematical model of communication (1948), the ultimate heritage of all modern communication models, and our proposed model for human communication. Another important difference is that the sender and the receiver actually meet one another in our model with

the potential for success in communication instead of the potential of failure which runs through Shannon's original paper (1948).

The Communicative Wheel, as a multimodal communication process model, does retain some of the flavour of Bühler's organon model. The key difference, however, is the circular and cyclical movement of communication and its dynamism. Communication is susceptible of transformation at all stages of the wheel while also being punctuated by the movement from station to station. Of course, Station 3 is not the ultimate terminus; it is merely a staging post for the invariant during numerous revolutions of the wheel. This dynamism, we would conjecture, will make the model reapplicable.

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