

Communication without Coding: Cybernetics, Meaning and Language (How Language, becoming a System, Betrays itself)

for my friend and mentor, Gordon Pask, without whom none of this would have happened, with thanks and love.

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Abstract

In this essay communication is considered as a cybernetic system in which two participants (the representer and the representee) share a representation (made up of a representing and a represented), each constructing his own meaning from the identity of the representing and the represented in the representation in the form of a conversation. Meaning, in this context, is not seen as lying in any part of the representation. This system is modified so as to incorporate a meta- and a subconversation which allow the participants in the conversation to negotiate agreement more effectively, and to better handle error. Types of agreement are examined, as is the conversation as a source of novelty. Further pragmatic considerations are introduced such that a series of agreements may allow it to appear that there is, after all, meaning in the act of representation, although this is always a matter of "as if". Certain consequences of this cybernetic system are developed and some of the prerequisites for such a system to exist are explored. Possible tests (and the value of such testing) are considered.

Personal Foreword

When I was invited to write this essay and submit it for this issue, I was both surprised and flattered. I had no idea, at the time, that I had anything to say about language. But the editor insisted I had, and so I looked back at older work and found he was right. I had, indeed, written quite a lot in this area. With my memory jolted, I rethought my research threads for a

research seminar at the University of Portsmouth and came to the surprising conclusion that representation and communication were central themes. (This should not have surprised me, for I had just rediscovered that my old work was deeply imbedded these concerns.) Writing this essay, then, seemed a natural development, and I was glad of the opportunity to refocus my concerns.

Yet I am no linguist, and do not pretend to be one, nor am I concerned with literary criticism. I know only what a layman might know, and not a very well informed layman, at that. So it is with some trepidation that I present this work. However, I am (again) fortified by the editor. He told me my job was to write about cybernetics (systems theory) and language, and that the job of finding it useful, of making the connections was to be left to the (informed) reader. With that rider (and excuse!) in mind, I venture to present this essay.

Prelude

It may be that this essay is misnamed. To a linguist, it may not be about language at all—I leave that to the reader to decide.

What it is about is that most cybernetic of matters, how it might be that we may communicate. It assumes that we do—that our experience is to be trusted—and it sets out a scheme in which communication is possible, (based on certain presumptions), then pursuing various consequences of this model. If this has a validity that linguists and critics recognise, so much the better.

The purpose of this essay, then, is, using cybernetics, to build an account of a means for communication to take place, without coding and without the need for meanings to be in the utterances of representation.

Presumptions/Premises/Assumptions: Meaning

It is taken as given that meaning does not lie in utterances, pictures, behaviour or any other such devices of communication, or in representation or the units of representation (whatever they may be, but including behaviours), or even in objects or entities (and behaviours), but is constructed by each individual involved in an act of communication. In this, the insight of de Saussure is seen as fundamental (see Ferdinand de Saussure “Course in General Linguistics”, New York 1966). Thus, in acts of communication, it is not the meanings that are communicated: meanings are not transferred, translated or encoded (the usual means ascribed to the transference of meanings).

The act of communication, nevertheless, is assumed to have constituents which may usefully be named here. These are:

INSERT DIAGRAM HERE

The representer establishes, in the (sometimes virtual) presence of the representee, the relationship (or temporary equality/identity) between the represented and the representing that somehow captures the meaning he has in mind, such that the representee, being faced with the represented and the representing, may construct his own meaning from the representation (the pair represented/representing¹). The roles representer and representee are, of course, relative: they switch: thus, if there is to be communication between A and B, and A is representer at first to representee B, then, naturally enough, when B replies, B is the representer to representee A. Equally, represented and representing are roles: there is no reason why they should not change. While we often use a word (representing) to refer to an object (represented), when we do not know the meaning of a word we will often use some object, for instance, to help us create our own meanings (eg, ostensive definition). The word “tree” may be explained (represented) by the object tree just as well as the object tree being explained (represented) by the word “tree”.

Meanings lie with the representer and the representee and are in principle private and inaccessible to others. However, they are expressible through representation. (This difference between what is inside and what is without any system, and the nature of the understanding that may be gained depending upon where we stand, is central in recent cybernetic thinking.) Meanings belong in the representer and the representee, but they also belong to the participants A, B etc. A may, of course, have his interpretation of what he thinks B is getting at (ie, he may have constructed his own meaning for what he believes his conversational partner has intended to represent): that is, A may have his interpretation of B’s meaning, where B was the original representer with A the representee. But A becomes a (potential) representer when he makes his own meaning from the representation B made to express his meaning, and this meaning may be taken to be his (A’s) construction of a meaning intended to mirror the meaning B intended to express (ie, A’s interpretation of B’s meaning, where it is understood that this interpretation is actually the meaning A constructs based on the representation B constructed of the meaning he (B) wished to express). (Such terminological long-windedness and exactitude is very difficult to handle and leads to our use of shortcuts. The nature and importance of such shortcuts will be dealt with later in the essay. For the purposes of brevity, it will normally be assumed that the communication we are interested in is person to person, A to B and back again: a greater number is, naturally, possible, but terminology and formalisation become generally unmanageable.)

Finally, it is assumed that we make our own meanings within, in order to construct, and to further our own necessarily individual worlds (universes of conception), which indicates that our meanings cannot ever be judged as “wrong”. They may be inappropriate, they (the meanings of another, as interpreted through representation) may be incorrect as interpretations of our expressions as we (re-)interpret them, they may not match some reference frame of convention (such as physical reality), they may be illogical: all of these we may call by the shorthand “wrong”, but that does not make them wrong per se. Our meanings are our meanings (they may be shared in a group acting as one—a superordinate—as the meaning of that one group) and they are not open to external evaluation or to judgements such as those of

correctness. These meanings and worlds are our constructions, and the freedom we have to construct them to our convenience, delight, benefit (or, indeed, to our pain) imposes an ethical price: we are responsible for our worlds and for our meanings: we accept this responsibility and indicate our acceptance by respecting this responsibility in others. If we do not, we lose our claim to act and to think for ourselves with all that that entails, especially (all too often) psychological damage.

In summary, meanings are not communicable: they are private and they are not in the world of (external) reference. Meanings are constructed, made by each participant in the act of communication is his own image, and are not given, inherent, or existing before their construction. Meanings do not lie in words or other elements of representation, but in the perceptions and cognitions each participant makes, and which we believe to be meanings of those things we believe are involved in acts of representation.

Thus, the salient question is not what meaning is, or what any particular meaning might be, but rather where it resides and how we may construct it and believe that we share it.

Coding

A note is in order about coding, since in early cybernetics communication was assumed to occur through coding. Thus, the position taken in this essay might appear contrary. While it is not the purpose, here, to argue the point in detail, a clarification will probably help.

There is a type of communication that appears to take place that is based on encryption and coding. This is the type of communication that Shannon and Weaver called upon (Claude Shannon and Warren Weaver, "Theory of Information", Chicago 1949), and which Norbert Wiener also subscribed to in his "Cybernetics" (Norbert Wiener "Cybernetics", Cambridge Mass 1948).

Coding has nothing to do with meaning as discussed here. It is simply a way of transforming one object sequence (taken to be familiar) into another (taken not to be familiar) such that the first object sequence can be recovered by those with the (encryption) key. It is a way of handling the representing. There is no meaning involved in this process, which works, insofar as it does work, because the meanings that we generate associated with it are assumed to be unambiguous—even empty and devoid of meaning.

As such, this process is ideal for control purposes, for instance. But it fails to account for how there may be a meaning that appears to be transferred, when this is the case. (How the process may communicate is hinted at later in this essay).

All this makes such communication essentially non-linguistic and certainly rather uninteresting. With the advent of the cybernetics of cybernetics (developed between say 1968-75), this approach is no longer the approach taken in

cybernetics, where encoded communication is seen as being at best a special case in which convention is strongly negotiated so that there is little room for manoeuvre and in which meanings are taken, as a convention of simplification, as being the same: a feat that can be achieved through the removal of individual thinking as is, for instance, so often undertaken in the armed forces. Saying that meaning is not involved is tantamount to the removal of individual thinking, of course.

It is encouraging, in the context of this essay, to know that de Saussure insisted that there was no necessary connection between a word and its meaning: their connection was an arbitrary synchronisation of two streams. He had terrible problems with onomatopoeia!

Introduction to the Argument

Cybernetics was defined by Wiener as “Control and Communication in the Animal and the Machine”. It is therefore appropriate to consider that most human action, communication, in a cybernetic light.

How can we Communicate (when all Meanings are Private)?

Clearing the Ground: the Commonality of Representation

The question of how we can communicate (in the context of this essay, build a cybernetic structure that allows communication as we would recognise it as an everyday part of our lives) is the question of how B may build a meaning that is seen, in acts of representation, to be similar to A's. That these meanings may not be the same is, of course, a *sine qua non* under the conditions described.

For, the transmission of a message is not the transmission of the meaning. (To receive a message is not to understand it.)

Your meaning is not mine, neither is your (point of) view: the meanings, understandings and outlooks, the perceptions and cognitions of A and B are different because A and B are distinct. Our meanings are private, to and of us. They are in principle not transferable. Furthermore, there is no way of showing that their understandings, for instance, are the same (herein lies the difficulty this essay deals with), and yet we believe we understand each other. How can that be?

We have dealt with this problem by assuming that representation in communication is the same for each of us, yet this is not really tenable. For each of us the representation is different, since it is also a matter of the difference in/between each of us. Yet we do believe that we share experience and understanding, that we are not alone. This we can do if we work with the assumption that behind the appearances (the understanding each of us has), there is something held in common. It is not important that there actually is this commonality—which would be undiscoverable, anyhow, because we cannot avoid being present in our

observations and our constructions. (Heinz von Foerster has the delightful aphorism to the effect that objectivity is the insistence that “the properties of the observer shall not enter the descriptions of his observations”—Heinz von Foerster “Cybernetics of Cybernetics”, Minneapolis 1995.) What matters is that we take the position that there is a common world of reference, that behind the differences there is a sameness, that we can talk of representation as if we are dealing with the same. That this may be a deceit, and that it is a fabricated fantasy, is a matter of absolutely no concern.

This sleight of hand is very powerful. I have argued that it is the (only) basis for our belief and actions in science, in a world in which the observer is understood to be not only relevant but also unavoidable. The metaphor is with the Wayang Theatre of Java: there is a screen and there are appearances on that screen which we take to come from shadows cast by puppets placed between the screen and a light source. But, in the model as applied here, we can never get behind the screen (the assumption that it is a screen we cannot get behind is one of our cleverest tricks: this is the screen of representation) and what is behind, even whether anything is behind, remains a mystery and a conceit. (I believe that this is, in essence, the position Wittgenstein argues in the *Tractatus*.) We treat the Wayang screen as if there were puppets and a light source behind it casting shadows: we can assume the puppets are the same even though our positions (and hence our views) are different: and, therefore, that there is a common world of reference and that there is cause.

In representing we may also behave as if, although each of us see each act of representation differently, there is a commonality in (or behind) the representation itself.

It will be taken, then, that we may talk of the representation (the trace of the act of representation) as if it were held in common. It is understood that it is not, but that we have a structure that allows us to talk as if it were held in common (as we do, in everyday life) and that it would be possible to devise a notation and a way of writing that would make this as if-ness quite clear, if very long winded. (The danger is that we forget that we are talking as if: this is a common matter, but is the subject for another essay.)

The Means of Representation: Meaning and Representation

Take it that there are two participants in the act of communication².

Take it that one (the representer) begins, expressing the meaning he has in mind. Take it that this meaning is of some object (in the generalised sense described above).

Let the act of representation consist of two elements brought together into a (temporary) identity, called the representation, initially by the representer, remembering, always, that to say two things are the same is to insist they are different (otherwise there would only be one thing and could be no identity). See Ranulph Glanville, “The Same is Different”, in Milan Zeleny (ed) “Autopoiesis”, New York 1980.

Call these two elements the represented and the representing. The represented is that about which we wish to communicate (of which there is a meaning in the representer's mind), the representing the extra device to enable this communication. Note that which is the represented and which the representing is a matter of choice and that the represented may become the representing, the representing the represented (the object tree may represent the word "tree"). Which is which is a matter of convention, convenience or context.

The representer, having a meaning for the represented, constructs the identity between the represented and the representing such that the meaning of the representing is the same (to the representer) as the meaning of the represented. Thus, the meaning of the represented is identical to the meaning of the representing, or is the meaning of (the represented, the representing), for the representer.

Note that the meaning is in (with) the representer, alone. There is no meaning in either the represented or the representing. There is only the insistence that there is an identity, that exists for the representer as an identity in his two meanings.

The representee is presented with the represented and the representing, together with the identity (which he must assume). His task is to construct the meanings that create the identity: that is to construct the identity, from the representee's point of view, that is the meaning of (the represented, the representing), that is the meaning of the represented that is identical to the meaning of the representing (he disassembles—the word deconstructs is appropriate but, due to its intensive specialist use, no longer usable—the meaning in the identity to be the meaning for each of the elements in the representation, as he sees it).

So far so good. But we cannot yet know that communication has taken place. For us to gain confidence that there has indeed been communication, that the participants have meanings which, while being private and different, allow them to act together, there must be a check.

(Misunderstandings, experience tells us, abound. We do not communicate exactly or even very well, when we look for precision. Legal writings and instruction manuals tell us this. The imprecision we experience, however, may lead to comedy (especially puns) and novelty: and to the requirement of individual difference and freedom.)

In the universe we have described, the universe of representation, there is only one way we can check our communication. That is, to repeat the process in the retrograde. In Cybernetics, this is, of course, called feedback. Thus, the representee must become the representer, the representer the representee.

Name the two participants, regardless of their roles: Me (I, My, Mine) and You (Your, Yours). Then, where I was initially the representer, I am now the representee. You, having been the representee, are now the representer.

You, (now) the representer, take the meaning you have constructed from the representation (which may be of the representation, or of the represented or the representing, since

they are all—as has been indicated—the subject of identity) as the meaning of (your new) represented, and construct a new identity with the meaning of (your new) representing to make a new representation.

I, now the representee, take this new representation of yours and construct the meaning that might create the identity, that is to construct the meaning that creates the identity: that is to construct the identity, from the representee's (my) point of view, that is the meaning of (the represented, the representing), that is the meaning of the represented that is identical to the meaning of the representing—from my point of view.

There is a final stage: I (the original representer) must compare my original meaning (I constructed as the original representer) with this new one (I have constructed as the representee). If there is an identity between my original meaning and this new one, I may take it that we have communicated and that you have constructed a meaning from my initial act of representation which is similar to mine (insofar as such a statement has any sense). That is, I may take it that what you have constructed from my representation, as I construct it through your re-representation to me, is the same. That your meaning and mine allow us to believe that we share. We have negotiated (as we will come to call it) an agreement.

(I may be prepared to accept an approximate identity between these meanings: we often say that a representation is close enough to what we mean, or something like that. To be really certain, I should re-represent it to you. But that is taking things further than is usually necessary, and, anyhow, simply follows the same pattern.)

This is the form of the conversation. As a formalised and precise device, it is due to Pask, who uses it as a fundamental in his explorations of learning and the formalisation of learning. (Pask's grand exposition may be found in two very thick tomes: Gordon Pask "Conversation, Cognition and Learning", London 1975 and "The Cybernetics of Human Learning and Performance", Amsterdam 1975. He always made his debt to RD Laing very clear. See RD Laing, H Philipson and R Lee "Interpersonal Perception", London 1966, and RD Laing "Knots", London 1970, for examples of the source of this indebtedness.

Communication and Error (in the Conversation)

What happens when I, the original representer, cannot make this identity between my original meaning and the new meaning I have made from your (re-)representation? When there is no agreement (as we will call it).

The first thing I can do is to re-represent my original representation: insist on it. In doing this, I am, in essence, asserting that my way is right. I make no moves towards you. (This is the way that politicians behave when they declare "I have made it perfectly clear...", which, of course, they haven't!)

Unless either you are very flexible, adept, giving (or whatever), this bullying tactic will not lead to the genuine communication of meaning. It may lead to continuing misunderstanding (which I am never likely to see, much less accept I have some part in), to the deterioration of

conversation to coding with what that intends for your (and, reciprocally, my) position as sentient and sensitive beings (as in fascist environments), or to your willingness to hide the absence of meaning (to you) in an attempt to “buy” some peace. None of these are very flattering to us as humans and they certainly do not indicate any form of communication as discussed here.

The second thing is to make a new representation, in the hope that you will understand it better than the first (make a representation of what I take to be your meaning such that I can create an identity between my original meaning and the meaning I construct from your representation based on the meaning you have constructed from my representation). (It should always be possible to make another representation, since the representing and the represented brought into the relationship of identity in the representation must retain their difference: they cannot be equal: the same is different. Thus there is always some aspect that was not included in the identity that is waiting to be of service!)

This second option is more collaborative and much more positive, since it is based on the judgement that my original representation did not work, and so I should try something different. In this, it recognises, more than the first option, that you have your own way of thinking, and are entitled to it.

The problem with the second option is that it is very hit and miss.

However, it may be that I can work out how you are “misunderstanding” me and use this to help me modify how I represent my meaning. I can do this by not only considering the meaning I originally had together with the one I have constructed from your representation, but by considering what the difference indicates and using this to help me determine how to change my representation so that the gap between the meanings may, I hope, be reduced in the next iteration in the conversation.

(Thus, by engaging in conversation, we also engage in building a model that accounts, in our own terms, for the behaviour of others: I begin to develop my model of your psychology.)

MetaConversation and the Substratum³

To be able to consider not a particular meaning, or the identity between meanings, but rather aspects of what a meaning itself might mean (for instance, the how a discrepancy appears and can be accounted for between what I intend to communicate to you and what it appears I do communicate to you, as devined from your feed back to me) is to introduce a new level into the conversation: that of the metameaning.

When we introduce such a level into the conversation, we introduce the concept of a meta-conversation.

The metaconversation takes the form of the conversation already indicated: it consists of representation made backwards and forwards between the me and you, as does the (normal) conversation. The purpose of the metaconversation is to improve our ability, in the conversa-

tion, in handling errors (that is, in reducing error on those occasions when we do not reach an agreement). It is a tool for negotiation, allowing the participants in the conversation to discuss their differences so that they may attempt to make a new representation with a better chance that it will prove acceptable than the simple hit-and-miss of the conversation as originally specified (above). It is a pragmatic device that allows for purposive and intentional modification rather than an arbitrary and hopeful appeal to chance that is the basic response to the feedback of the simple first instance. In this, it adds a further cybernetic dimension: not just of feedback, but of a mechanism for reducing “error” when it is found. It is not concerned with communicating the meanings of the conversation, but with communication about mismatches between the representations made by the participants. (Of course, these are meanings, too—strictly metameanings—but it is best not to further confuse this issue.)

The value of such a metaconversation in reducing misunderstanding is familiar to all from everyday experience. In conversations we are able to move quickly and fluidly between these two levels, and we are all used to discussing, in mid-stream, how better to move towards some agreement, to remove misunderstandings, to discuss our differences. Thus, conversation is a form permitting negotiation: usually negotiation of agreement, but, on occasion, negotiation of the agreement to disagree.

At the same time, while the conversation becomes more effective when in company with a metaconversation, the conversation may also be, in itself, a metaconversation to a substratum of the conversation—a subconversation, as it were.

What does the subconversation, the substratum, give us?

It gives us grounding, a context. Just as the metaconversation is a conversation about the conversation proper, the conversation may be seen as being a conversation about the substratum or subconversation.

Why does this matter?

Because it allows us to assume the subject of the conversation to be agreed and current while we elaborate on it in the conversation proper. That is, the existence of a (negotiated and negotiable) subconversation allows us to do more than just negotiate one subject of the conversation (and then another): it allows us to talk about those subjects.

And that, too, is our common experience.

The Conversation and Novelty

A familiar feature of conversation is that we find we are talking about new topics, and even exploring and/or expressing completely new meanings. In part, this is for the obvious (but frequently overlooked) reason that conversations involve the creative, constructive input of two participants and we cannot ever know the meanings of the other, and hence cannot know his input. (We can predict, of course: in a conversation we can model our participant’s psychology, as already indicated.) There is always that which we have not thought of. The

possibility of novelty is increased in the act of representation, because (again) saying two things are the same is also saying they are different.

But, in another way, the form of the conversation (rather than the conditions surrounding it) may lead to novelty, especially through the act of representation.

There are three components in the act of representation as defined here. The first is the identity that is computed between the second and third, the elements of represented and representing. The entire mechanism depends on the identity being computed by the representor (and later by the representee) between the represented and the representing, so the identity relation is essential. But the represented and the representing are more flexible.

Assume that the participants in a conversation are not concerned to agree they have communicated, in the immediate term. (They can have agreed this through the met-conversation.)

Assume there is a mismatch in communication: that is, the representee, in re-representing the representor's meaning, does so in a way that the representor cannot create an identity between his two meanings.

The source of the difference may be taken (at least partially) as lying in (the understandings of) the represented and the representing being fed back to the representor by the representee.

Take this "misunderstanding" to be a benefit: for it permits the conversation to move on, "of its own accord", due to the interaction of the two participants. Thus, it gives the representor a surprise—something new.

There are four possible changes in the elements of the representation that may be made.

Firstly, the represented remains the same and the representing changes. This is the mechanism that allows agreement (including the agreement to disagree) to be negotiated. It is the basis we have worked on in developing the power of the conversation so far.

Secondly, the represented changes while the representing remains the same. In this case, there is a new topic of conversation. We start to talk of something different and new.

Thirdly, both the represented and the representing change. When this happens, we have a freewheeling conversation, a brainstorm, stream of consciousness, a hunting for whatever we may, eventually, find (it is not necessary that we know what we are hunting for before the event of discovering it). This process of "wandering", which is how I characterise design, does not need a partner. It may be carried out in a conversation that we hold with ourselves. This point will be returned to later in this essay.

Fourthly and finally, we have the case that neither represented nor representing are changed, leading to a deadlock. This has already been discussed.

(It should be noted that these four possibilities exist even without there being a misunderstanding. In this case, either the meta- or the subconversations will play a role.)

Thus, by allowing changes in the representer and representing, we encourage novelty to enter the conversation.

Communication, Conversation and a shortcut that is Language

This essay has not been (and could not have been) written using a prolonged process of conversational negotiation, although it has been written with negotiation in mind (in as far as that is possible with an abstract reader and a fixed-by-printing form of words: clearly the claim is absurd, yet it is meant). Conversational negotiation is a fine mechanism, but remains very long-winded. However, this essay is written using a device we call language (and allowing the use of such notions as “we call”).

Language, as a term, has come to be interpreted in very many ways. We talk, for instance, of formal languages (even though attempts to make natural language formal have limited success) and we use the word language in many contexts, often to imply symbolic or rule-bound systems.

In this essay, and most particularly in this section, language is used to mean normal, everyday, natural language, and not either formal or metaphorical languages.

A number of pragmatic devices have already been introduced in this essay: in particular, the meta- and subconversations that allow a conversation to take place in an agreed context and to be corrected “on the fly”.

But, still, the greatest pragmatic (I use the word pragmatic in its normal sense) communication device we have invented is (natural) language.

Take it that you and I are involved in many acts of communication over a period of time.

Let me wish to communicate to you what I determine is the same (to me) meaning on many occasions.

Let me use the same representation on each occasion.

Let the conversations indicate that you, too, have determined the meanings you construct on each occasion are the same.

Let us agree that the representing which has led to us each constructing stable meanings concerning the represented, satisfying the condition of agreement in a series of conversations, should be taken as indicating that both of us have a stable meaning constructed from the act of representation in which the representing represents the represented.

Let us agree that it is as if the representing “means” the represented, for on each occasion we have constructed our individual meanings which remain stable, you and I.

Let us relax our degree of precision: we say, as a shortcut, that the representing means the represented. (But we should mean it is as if the representing means the represented.)

We now have the start of an agreed lexicon.

We have words and phrases that (are as if they) have agreed (hence definable) meanings.

Let there be another. Call him he.

Let him join us in a conversation in which the same act of representation using the same representing to help communicate about the same represented is repeated with him as an extra participant, until he agrees that he has constructed a meaning that matches the meanings that you and I have come to agree, in terms of the form of the conversation. He has negotiated with us to construct his meaning such that it may be said to agree with ours.

He now shares the meaning we attributed to the representing, as if it could have meaning.

We now have the start of a general agreement about meanings, and an ability to impress our meanings on others in conversation and also by making it a “signing on” condition.

Let it be possible that such representings, said to be bearing meanings of their representeds, be combined.

Let there be a way developed, in the same manner, that the assembly together of these meanings may be taken to be non-arbitrary: that is, is intended to be meaningful.

There is now a structure (or some such) for the joining together of separate, negotiated representings that may be considered as a grammar or syntax.

With these two agreements (and deceptions) in place, we now have language. The sleight of hand of pretending that it is as if meaning is in the representing allows us to define and determine the units of what is now linguistic discourse, even though meaning is properly in the participants in the conversation, and not in the act of representation.

There is an irony here. We started by insisting that meaning exists only in the representer and the representee, and not in the represented and representing. We appear to have ended up claiming that meaning exists in the represented and the representing.

Of course, this is not quite so. No matter that we agree (as a social act: and all communication is in some sense social—there is no point in it unless there is someone to communicate to, even if that someone is the representer, himself, at a later instant) to stabilising what the representings (in all their richness of sound and structure) represent: we have to become part of that agreement and we have to make our (own) meanings (our own). It is possible to talk as if there were meanings, in these representings, of particular representeds (whichever is whichever), but that is not where the meanings are. They are still with us, the representer and the representee. Yet the mistake of believing that they are with the representings becomes

easier to see and to understand—and in becoming comprehensible, becomes also misleading, for we forget the as if and mislead ourselves into considering that language, and the linguistic statements that constitute language, possess the meaning they do not.

In making the negotiatory pragmatic shortcut that is language, we agree not to disagree.

A Rattle Bag⁴ of further Consequences (for Language is one already)

To be able to make conversation, as discussed above, we need a special view of the world and a number of ways of constructing that view. The view is constructivist (although it is not slavishly so: pure constructivism is as unmanageable as communication without the shortcut that has been argued to be language). We need the means of constructing it.

This should really be the subject of another essay, for it is an enormous area. But a gloss is given here, for not to do so is to leave the arguments constructed about communication, conversation and language essentially floating in the air, ie unfounded.

Firstly, there must be a way of constructing: meanings, things, relationships; the representer, the representee, the represented, the representing, the identity—everything involved in the act of representation by which communication takes place.

This is provided by the constructive logic of George Spencer Brown's "Laws of Form", London 1969. The key to this work is the command "Draw a Distinction". It is this primitive act that constructs the world we make for ourselves and which we inhabit. Distinction drawing provides us a means by which we can (must!) construct our world—by requiring the observer, present and active. Hence the command. Drawing a distinction creates the boundaries that allow us to assert existence.

Secondly, we need structures (call them objects of attention) which we can assume (take as if they existed) and which have the property of being observable differently by each observer while, nevertheless, being able to support the belief that they are the same. Such objects of attention are what I have described in my Theory of Objects (see Ranulph Glanville "A Cybernetic Development of Theories of Epistemology and Observations, with reference to Space and Time, as seen in Architecture" 1975 (Ph D Thesis, unpublished), also known as "The Object of Objects, the Point of Points,—or Something about Things"). Their peculiar properties allow them to be assembled by observers such that a (temporally based) logic is generated, thus giving rise to the relationship identity. Such Objects (as they are called, with a capital O) are taken, in a universe of observation, to be self-observing, as distinctions are taken to be self-distinguishing.

Thus, we may have a universe in which conversation is possible.

Another area of consequence is the conversation with oneself. For the purposes of explanation, and because it seems self-evident and just plain sensible/common sensical, we have taken a conversation to be between (a minimum of) two participants. However, as was intimated earlier, a conversation is possible with the self (or what I take to remain as myself

at two separate instants).

If I converse with myself, and if I find that I create the same meaning time and time again, I may say that I have attained a constancy of meaning. Thus, by conversing with myself I can attain what Piaget refers to as “Object Constancy”, or the “Conservation of Objects”: the ability a child has to determine boundaries, consider central Objects in spite of different observations, and achieve some constancy in his conceptual world: that is, come to be a conceptual being, according to our current understanding of what that means. (The wish to account for this is why Piaget refers to himself as a genetic epistemologist. See, for instance, Jean Piaget “Psychology and Epistemology”, New York 1972.)

Thus, I can learn: learning is merely a synonym (although there are also other forms of learning).

But, if I converse with myself and find that I do not create the same meanings, then my thinking may shift. This is the key to the process of design, as I understand it (I liken design to wandering in the countryside until I happen upon a place that I recognise as being the goal of my wandering, thus giving my wandering purpose and direction). The characteristic of the critical part of design, from the point of view of getting ideas, is the pencil-on-the-back-of-the-envelope stage of sketching. The characteristic of sketching is that the sketches give the designer back ideas other than those he had in mind at the time (ie, the represented changes while the representing remains the same: then the (revised) represented may be represented with a new representing, continuing the process).

Finally, there is art. Art—great art, at least—has often been argued to be full of meaning. Many professionals make their living telling us what it is. The argument presented here requires that great—and the not so great—works of art have no meaning. We give them meaning, the meaning is not in them. (This is, of course, sensible and obvious in a completely different manner in terms of great art, where the art-work has continued to be seen as having relevance and value in different ages, to different people in different societies, etc. This holds, even, of the best propagandist design work: the power or the slogans has gone, but the power of the design is still being (re)discovered by members of new generations of viewers who do not understand the slogans but do, nevertheless, make their own meanings.) John Cage once insisted that, after he had composed his pieces he had no responsibility for them, nor did he have any special right as an interpreter. Architects have, of course, known this for ages: their works are constantly reinterpreted, and the architect’s intentions are treated as being as irrelevant as they truly are. Samuel Beckett added his salient and pertinent comment, to the effect that if he knew what his work was about he would not have wasted the time writing the stuff. He is not alone in this observation.

And, as to analysis, and the so-called facts that that produces, the composer Harrison Birtwistle once informed the author (correctly) that you do analysis to learn about yourself, not about the art work you are examining or the artist who made it.

However, there is, I believe, one function in art that is of special significance here: art has the

ability that few human constructions and actions have (making love and a profound religious experience may be others) that we lose ourselves in its presence. Our original distinction, which always involves us in making it, seems to be obliterated: we lose the sense and consciousness we have of ourselves and of our being, and of the passage of time, becoming one in and with the void that we distinguished ourselves from—destroying the void for us by beginning to become us—in the drawing of that first distinction. Needless to say, when we are (temporarily) absent, in abeyance, we can construct no meanings: and this may be yet a further reason that art is without meaning. We join with all in a wonderful (that is how it feels to me) unity, a loss of self, a transcendence. I am speaking personally, not arguing a point, and what I say will either ring true or not: it is not open for or to argument. Such experiences and moments are very precious, and this is one reason that I value art.

Art is involved in the creation of novelty, and the point has already been made that the conversation has within it a mechanism for the finding of new things. The concomitant point has not, however, been made. As a participant in a conversation, I may change some element in the representation, just as my partner may. But, when I change it, I change it within my own range. That is to say, since it is I who changes it, I can only change it in some way I know how to change it. But if you change it, I may be surprised. If I insist on being in charge, of doing the (figurative) “talking”, I will remain within the limits of what I can imagine. By listening as you do the talking, I may move beyond the limits of my imaginings because I am borrowing from you.

Finally, and in a somewhat similar vein, I can hardly teach, in a conversational paradigm, without learning. For I need to construct my version of your psychology, and I need to allow you to contribute to the conversation. Indeed, liberal educationalists would insist, anyhow, that I should allow you (the student) to lead. And, in doing this, I must learn from the difference in your vision of the world and mine as they appear in the acts of conversational representation. The best, most creative teachers are, we know, just better paid students with added authority.

Testing

What has been presented in this essay has been a development of a cybernetic model of communication in which meaning is created by the participants rather than being carried in the act of representation. This satisfies the aims stated at the outset. However, there have been various suggestions made concerning language which it might be possible to test in order to determine, should it be considered desirable, the applicability of what has been developed in the fields of linguistics and other related areas.

It is, of course, hard to know quite what this applicability should entail, and also what would be appropriate linguistically that is separate from what is appropriate cybernetically. This is a matter for linguists to decide, rather than cyberneticians. Anyway, there are certain aspects of what has been developed here that it is impossible to test.

For instance, it is not possible to determine whether any language has developed in a manner

that reflects the positions taken here (languages are too old: and, for them to have become languages, they have to have gone through the stages described here—of which there can be no language record—if what has been presented here holds. (Of course, the purpose of the argument was not to be chronologically or even factually correct: it was to develop coherent explanation of something we all know and live in. The function of an explanation is not to be true, but to give an acceptable and helpful account—that is, to make clear and simple for us to understand and account for.)

Nevertheless, it is clear that the form of the cybernetic conversation, and its practice as described, have the ability to account for two major characteristics of languages, in principle at least. The first is the constant dynamic change found in language: if language is a conversation, then change is only to be expected. The second is the emergence of different languages: since conversations are carried out between different participants (and, which is the same, participant groups), we may expect differences in both vocabulary and structure to reflect this (or, rather, there is no reason why we should expect them to be the same).

However, we may still wish to find some tests that seem legitimate. What might some of these be?

We can (and do) study how babies and children learn language in the belief that it tells us something about how language, itself, is. The sorts of questions that may be posed include asking whether babies do learn through a process of negotiation in the form of the conversation with feedback, and whether they are allowed to make individual variations. (My belief is that both of these behaviours happen, and that parents perform entirely conversationally in the manner—and with the limitations—described above.)

We may ask whether the insights presented in this essay, both in the discussion of the conversation and its development into language, and in terms of the so-called consequences, are helpful: and whether they ring true in reflecting our experience, or can give us what seems to us to be a valuable explanation.

Finally, is there, can there be, any value in this essay (see the irony pointed out above)? Is that a contradiction in terms? For the essay is meaningless. Except in that you and I give it meaning, and that we use the shortcut of Language to reduce the negotiation needed in this strangest of all conversations.

The best proof of this essay may be in our (your and my⁵) answer to the question:

“Does it ring true?”

Conclusion

In this essay communication has been considered as a cybernetic system in which two participants (the representer and the representee) share a representation (made up of a representing and a represented), each constructing his own meaning from the identity of the representing and the represented in the representation in the form of a conversation. Meaning,

in this context, is not seen as lying in any part of the representation. This system was extended so as to incorporate a meta- and a subconversation which allow the participants in the conversation to negotiate agreement more effectively, and to better handle error. Types of agreement were examined, as was the conversation as a source of novelty. Further pragmatic considerations were introduced such that a series of agreements may allow it to appear that there is, after all, meaning in the act of representation, although this is always a matter of “as if”. Certain consequences of this cybernetic system were developed and some of the prerequisites for such a system to exist were explored. Possible tests (and the value of such testing) were considered.

There is a final question: what would happen in our world if it were without communication?

¹ The terms represented and representing are preferred to the more normal, linguistic terms representandum and representans, just because they are not linguistic terms!

² Two is the minimum for communication, although, under certain circumstances, one may speak to oneself, as if another. This is what happens in the conversation that designers hold with themselves via essay and pencil. More than two are possible, but confuse the argument further.

³ The two extra levels argued for here were first proposed in Annetta Pedretti and Ranulph Glanville “The Domain of Language”, in R Trappl (ed) “Progress in Cybernetics and Systems Research”, vol 11, Washington DC 1980 (as were certain aspects of the void used in this essay).

⁴ After Seamus Heaney’s and Ted Hughes’ delightful Selection of Poetry (Seamus Heaney and Ted Hughes (eds) “The Rattle Bag”, London 1982).

⁵ I am aware, and have been throughout, of certain similarities between my I and you, and Martin Buber’s “I and Thou”. I have intentionally left noting it until the end. My starting with the participants A and B, and switching to I and you at the point that communication was really introduced, was no accident. It was intended to further a perceptual shift in the reader.