

Notes on Disagreement

UDO KLEIN & MARCUS KRACHT

ABSTRACT. There is more to disagreement than questions of factual error. When we disagree it may just be that we mean different things using the same words. This is a major source of complication when talking to each other. It traps us into believing we should agree when actually we don't. On the other hand, disagreement when it arises allows us to diagnose the divergence and so to get closer to a common understanding of the words we use.

1. INTRODUCTION

Language is generally assumed to be homogeneous inside what is called the language community. This is also a common presumption in everyday conversations. When we talk to each other we assume that the words the others use have the same meaning for them as they do for us. And we think that they associate the same ideas with our words as we do. Yet quite often this is not the case. Compare your definition of “poor” with a technical description provided by an agency.¹ There are bound to be differences, and they are not only due to the fact that the agency can actually quantify poverty when you cannot. It may be that their definition yields differences in real terms. When for example they define that to be poor is to earn less than half of the average income it may be that some earn less than half the average income and still you do not think that they are poor, or that some earn more and you think they really are poor. Or compare your understanding of the word “poor” with that of your neighbour. Again, you may find that you two disagree in very subtle ways. While he thinks that not being able to own a car is a sign of poverty, you may think that this is not so. But do these differences matter? And if they do, how do we still manage to understand each other? And can there at all be cases when someone is wrong about the meaning of a word?

As it turns out, we all have ways to cope with the situation of misunderstanding despite the initial impulse to think that everybody speaks the same language. And that is because we all have experienced situations where our words had different meanings—if only as a child, when we had to learn our very first language. However, the formal theory does not seem to have progressed far enough to deal with this fact. There are still some who wish to maintain the belief that mutual understanding requires the use of a common language. Some of that is driven by a curious fear—expressed **recently** among others in Glanzberg (2007) and **Cappelen and Lepore (2005)**—that we could simply not communicate without a homogeneous

¹There is absolute poverty, relative poverty, poverty as defined by national committee, the World Bank, the United Nations, and so on.

language.² However, it is one thing to lack an explanation for a phenomenon and quite another to deny its existence. The evidence against a shared language is overwhelming, although the idiolects seem to share a common core (if at least in the form of a set of common words and constructions). Thus language, it appears, is both a private and a public entity. This tension creates an interesting role for communication. We will argue among other that successful communication *in the sense of fully shared meanings* exists only in rare situations. Mostly, we simply (optimistically) assume it to be given. This means that successful communication in this sense rarely ever happens. But since we rarely find out about any discrepancies the failure will mostly not be diagnosed. And this leaves us with the impression that communication works perfectly. When occasionally we realise that we misunderstand each other, we do not break down. Quite to the contrary. We humans can actually fruitfully deal with this situation. Failed communication not only exists but also opens interesting avenues to improve our mutual understanding.

A final point concerns compositionality. A standard argument in favour of compositionality is that we can understand the meaning of a sentence that we have never seen before. It is feared that the individualisation of language makes it impossible to make this argument. We do not think so. For it is not necessary to assume that the result of someone else's meaning composition is the same as yours. Diagnostically, however, if you assume the sentence to mean anything you please and someone else can do the same, then who is to judge that the result of meaning composition has any value? The answer to that question is simple: compositionality simply is a property of an individual language. Communication does not figure in the definition of compositionality. It is not needed. You may even have a different meaning composition algorithm for the same language, let alone for different languages (based on the same syntax).

The paper is structured as follows. In Section 2 we argue that the homogeneity assumption is actually ill-founded. We should in fact expect endless variation. This opens the door for less-than-optimal communication. Section 3 discusses an example on how misunderstandings can be diagnosed and managed in dialogue. The following sections work out some of the theory behind this story. Section 4 broadens the scope somewhat showing that not only are differences in semantics part due to the fact that we have to learn them, but also that the variation is deliberately created and exploited. Pragmatics will have to take some of the burden of explaining which of the many meanings enter the discourse. The next section, Section 5 takes this a step further. Given that we can manage to talk with each other knowing that meaning differences exist, we can bridge them only if we have a theory of the language in its totality. That is to say, not only are we informed about our own language, but we also possess a (somewhat incomplete) theory of the language of other people. In analogy to the phrase "theory of mind" we may call it "theory of language". The Sections 6 and 7 provide a theoretical reconstruction of communication in terms of the calculus of judgements. Crucially, the

²References to Plato and Locke?

calculus allows to deal with both judgements and announcements,³ which are the fundamental categories of communication. Section 8 shows how the distinctions in meaning from one person to another inform pragmatics. For example, if you promise us something, whose understanding of the words is relevant in that context? In Section 9, we look at the issue of evaluatives and see whether it is relevant for the present discussion. The remaining sections deal with some loose ends.⁴

2. WHY LANGUAGES CANNOT BE UNIFORM

In this section we shall attack what we call the “homogeneity assumption”. By that we mean the assumption that all speakers of the same language community share the same language in the sense of relation between expressions and meanings. This assumption says more exactly that if A and B are members of the same language community, they both attribute the same meanings to the same expressions. We shall not only show that this is factually not correct; rather, we shall show that it is virtually impossible to guarantee that a language can be taught so that in the end children speak exactly the same language. Thus, even if at the beginning the language is homogeneous, this homogeneity disappears in one generation. Moreover, at the semantic level, it is to be expected that any two individuals are using (if only slightly) different languages. **In particular, it is to be expected that the languages used by two individuals speaking the ‘same language’ will differ (if only slightly) at every level of linguistic analysis. We shall focus here on the semantic level.**⁵

When children learn their first language they have to learn the syntax, morphology, phonology of the language while they are also trying to communicate with other children as well as with adults. Anyone who has witnessed their frustration in telling us something and being consistently misunderstood can appreciate that communicating their intentions can be very hard for children. They very early on think that everyone else will understand what they are saying. As adults we mostly know however that this simply isn’t the case. Endless battles in school about important concepts such as “good music”, “democracy” or “free will” have taught us that other people might think quite differently about them. Meanings need to be learned, too. And there is no guarantee that we are fully competent when we are finally grown up. As Putnam (1988) has argued, even adults use many words without being able to say exactly what they mean. If asked, they would say that elms are a type of tree—if they know that English word at all. Yet they probably could not identify elms nor tell us how they are different from, say, oaks. They would assume that elms are not oaks, and oaks are not elms, but that is hardly something they know for sure. They simply apply a heuristic rule that different words mean different things, and that mostly they tend to be exclusive. The deeper question of

³**TODO Clarification of announcement as opposed for example to assertion.**

⁴We wish to thank Hans-Martin Gärtner, Jan de Ruiter, Ralf Vogel and Christian Wurm for many discussions. This work was done as part of the project A8 in the SFB 673 “Alignment in Communication” whose funding by the DFG is gratefully acknowledged.

⁵**Variation on the phonetic and phonological level is discussed and modeled among others in ??.**

course is why that is so. The answer we suggested above was that languages need to be learned in a way that excludes direct instruction on meanings themselves.⁶

Children face the formidable task of not only identifying the structure of the language, but also shaping the meaning of the words. All they are given is some indications towards that goal. They will learn, for example, that a certain colour is called “red”, while another is called “green”, yet another “blue”, and so on. From this input they can directly infer only that some particular colour is red, green or blue; but over time they will produce some hypotheses as to how the spectrum is divided up into colour names. Algorithms that allow them to do so have been proposed among other by Gärdenfors (2004); see also Kelley (1984) on the problem of abstraction. All these algorithms share the following interesting property: *there are (typically infinitely) many series of input data that lead to different results while each being consistent with a fixed language.* That means the following. We start with a language L , which is a set of pairs $\langle e, m \rangle$ consisting of expressions and meaning. Expressions are in this case colour names and meanings intervals of wave lengths.⁷ So, the meaning of “red” is given by an interval $[\lambda_r, \mu_r[$ of wave lengths, the meaning of green by some interval $[\lambda_g, \mu_g[$, and so on. This means that the expression red is applied successfully to any wavelength ℓ such that $\lambda_r \leq \ell < \mu_r$. Thus the *data* consists in an arbitrary finite series $\sigma = \langle \langle e_i, \ell_i \rangle : i < n \rangle$, where e_i is a colour name and ℓ_i a wave length from the corresponding interval, i.e. the colour name is successfully applied to the wavelength. To be somewhat more explicit, the data simply consists in a series of utterances. Each utterance u has a context c . From this context we can distill fragments of meaning of the elements (in the given case the situation provides a specific colour, whose wavelength is the sought after data point). So we take as input data for the algorithm pairs $\langle e, d \rangle$, where e is a sentence and d the associated data point. Call a series *consistent* if the sentences are actually made true by their respective data points, that is, if the speaker is always telling the truth. Or, in the case at hand, if we are interested in meanings of constituents, the data point should supply correct denotata. The algorithm is a function $f : \langle L, \langle e, \ell \rangle \rangle \mapsto L'$. It takes as first input a language L (here a set of pairs consisting of colour names and the associated intervals (!) of wave lengths) and a pair $\langle e, d \rangle$ and computes another language, L' .⁸ The algorithm starts with a fixed null state (for example, the empty language). The language eventually learned is defined as follows.

$$(1) \quad f_L(\sigma) := f(\langle \dots, f(f(L_0, \langle e_0, \ell_0 \rangle), \langle e_1, \ell_1 \rangle), \dots \rangle, \langle e_{n-1}, \ell_{n-1} \rangle)$$

Then the property can be defined more formally as follows.

⁶This is to be contrasted with computer languages. By obtaining an installation software you are then equipped with a total data set that implements the language on your computer with all meanings of expressions given.

⁷There is more to colours than wavelengths, see Gärdenfors (2004). However, the nature of the conceptual space is quite irrelevant, as long as it is infinite and reasonably homogeneous. Essentially, it needs to be divided into finitely many parts without there being a priori ways for doing so.

⁸One way of specifying f is as follows: If the data point d is outside the interval m denoted by e in L , then the meaning m' of e in the resulting language L' is the interval resulting from minimally extending m to include d . If the data point d is within the interval denoted by e , then $L' = L$.

There are at least two (typically infinitely many) consistent series $\sigma, \sigma' \in L^+$ such that $f_L(\sigma) \neq f_L(\sigma')$.

Effectively, this is a version of the indeterminacy of a theory by the data. More precisely, as the algorithm is deterministic, the randomness does not lie in the learning procedure but in the actual data encountered. The principle above states a core assumption of cognitive grammar: that the adult grammar is a result of the individual learning history. Since no one can guarantee that we are fed with the same sentences on the same colours, no one can effectively control the training sequence, and so the result is to some degree random.

This means that the transmission of meanings from one generation to the next cannot be guaranteed to yield unique results, even if we fix the algorithm that constructs these meanings. And that in turn means that we cannot expect *at any given moment* that the concepts people use are identical.^{9 10}

And yet everything seems to work fine. Nobody is worried about the idea that others could misunderstand them. Children do not wait until they master the language before they expect to be understood. To the contrary, their basic assumption is always that they are being understood perfectly. It is quite an optimistic perspective in view of the many ways things could go wrong. But it is probably the best they can do.

When we get older, the situation is essentially the same; there is no guarantee that we are being understood. However, there are some differences. On the one hand we have become more knowledgeable about our language. Moreover, when we have learned the language well enough it is through that very same language that we can transmit the idea that something has gone wrong in communication. This is what we shall investigate here. Rather than looking at action exchanges (which we would need to look at for first language acquisition), we may look at verbal exchanges. What makes this particularly interesting is the apparent circularity. What seems to happen is that we are able to pull ourselves out of the swamp by talking to each other. Somehow we manage to clear that mess of different ways of talking step by step.

3. A SHOWCASE SCENARIO

Suppose Marcus argues with John about peak oil (the point when the world oil production reaches its overall maximum) and John says

⁹More precisely, the initial point, when language was invented, so to speak, is a potential counterexample. However, it is highly doubtful if such a point ever existed. The more realistic picture seems to be that languages arise through mutual agreement, and thus have never been fixed between speakers to sufficient detail at any point of their history.

¹⁰Contrast this with the idea of learning theory. Most algorithms work with the so-called limit assumption: given enough time we shall settle on the right grammar. But what do we do in the meantime? And, more, importantly, what happens if we only have limited time? Indeed, the story in Niyogi (2006) is that language evolution is the side effect of imperfect learning, which in turn is a necessary side effect of the time constraint. What Niyogi does not consider, though, as he is mainly working in the principles and parameters framework, is the possibility that there is no unique target grammar to work one's way up to.

TABLE 1. EIA, Crude oil including lease condensates (2010)

2001	2002	2003	2004	2005	2006	2007	2008	2009
77.686	76.994	79.598	83.105	84.505	84.661	84.543	85.507	85.389

(1) Peak oil happened in 2006.

Now suppose Marcus disagrees. Then what is he in fact disagreeing with? Is he really disagreeing with what John said? Could they perhaps both be right (or wrong)? To see the problem, suppose that Marcus openly disagrees with John. He shows him the figures in Table 1 and says: “Look, the world production of oil in 2008 and 2009 is slightly larger than in 2006.” And suppose John now says: “Yes, I know these figures, but they count something different. By ‘oil’ I mean conventional oil, and what your figures show is not the production of conventional oil but also of natural gas liquids and other liquids, also called unconventional oil.” And so John is giving Marcus a one minute lecture about the different sorts of oil and what goes into “peak oil”. Effectively, the problem has turned into a discussion of what “oil” means. And so Marcus will learn from John a new fact, namely, that there are two types of oil, conventional and unconventional oil. And that conventional oil is used in his definition of peak oil. And so, the difference between John and Marcus was that while by “oil” John meant only conventional oil, Marcus meant that term to indiscriminately include what John called conventional and nonconventional oil (without knowing that there was such a difference).¹¹

Note that the disagreement between John and Marcus is not related to vagueness: “peak oil” names a particular event, and therefore there is no sense in which “peak oil” could admit borderline cases, unlike eg. “poor”, “rich” etc..

The reply that Marcus gets from John makes it clear that (at least as far as John is concerned) they are not in disagreement about the facts but in disagreement about the meaning of the words they are using. Of course, at that moment this is simply *his* assessment of what is going on. As for Marcus, he will have yet to become convinced that the distinction is real and not made up; in other words, he may still subscribe to the idea that they are using the word in the same sense. Or he may decide that they do not and instead try to find out what he thinks the difference is (other than taking John’s words for granted). Thus he may decide to take “oil” (if uttered by John) to mean conventional oil, whatever that is. Then he obviously has to review his figures and see if John has a point. (Since there is no way to realistically validate the numbers, all Marcus can do at this point is to search for something that explains their origin.) Or he insists to let “oil” uttered by John mean what he took it to mean (and maybe review the figures as well). Recall that the situation is that he had no previous idea that there can be different varieties

¹¹See “Looking in the Rear View Mirror” by Phil Hart (<http://www.theoil drum.com/node/7909>) and the discussion thereafter to get a feel for the complexity of the issue as discussed here. Moreover, there are supplementary issues on the method of data collection and its (desired or undesired) consequence, discussed in “The EIA - JODI divergence Part2” (<http://www.theoil drum.com/node/7965#more>).

of oil and that oil statistics do not always count the same varieties. (This is now a question of facts not meanings once we are in agreement about the substance in itself, namely “oil”. The whole point of the discussion is that there indeed *are* different methods to produce oil and that the terminology reflects this. Most people know of one: pumping it out of the ground—known as conventional oil.) Then in that situation it may seem to Marcus that they are not disagreeing about the facts. It could in principle still be the case that his data contradicts John. But suppose that this is not the case (typically good data sets show you which varieties are being counted).

Let’s follow one particular trajectory, namely that Marcus accepts John’s claims. Then, after the discussion the situation looks as follows. Not only was his objection to John’s statement invalid, he also acknowledges that John’s statement has been right after all, and that he knows more about the subject, and he (Marcus) accepts John’s viewpoint. This may or may not have consequences for Marcus’ use of the word “oil”. We will return to that issue. Also, we claim that most people in this situation accept John as a higher authority, who could decide in this discussion on language use better than we do. The problem with that assessment, though, is that there normally is no central authority on language use, so all these ideas of authority over language need to be negotiated as well. The upshot is that in the discussion we may accept John as an authority and decide to “upgrade” our language use. Saying that someone is right or wrong about certain language use has to be taken with a grain of salt. They are often used with hindsight. Once Marcus adopts John’s way of talking, he may class his earlier usage as erroneous, though before that shift it did not appear to him that way.

Let’s look at another trajectory. Suppose Marcus had instead said in response to (1):

(2) Yes, peak oil certainly did not happen in 2008.

or something of that sort. Then what was he saying, not knowing that there are different varieties of oil? What did he mean by the word “oil”, and also by “peak oil”? If John by chance disagreed with *this* statement, what proposition of Marcus’ did he reject? Did he know? It seems that judging Marcus’ utterance using the meaning of the words from his own language he was issuing an incorrect statement (see the data in Table 1). And yet John will in this setting agree with Marcus, taking Marcus’ words to mean what he (John) uses them for. There would have been no open disagreement even though Marcus had made a mistake. Indeed, Marcus missed a chance to get to know something about John’s language. If, however, by accident John knows how Marcus normally uses the words, he might say that Marcus is being inconsistent (because peak all liquids might well have occurred in 2008).¹²

¹²Our focus on this particular instance of disagreement is not meant to imply that this type of disagreement is the only or the main type of disagreement. In our case the disagreement was triggered by the interlocutors making different assumptions on which event “peak oil” names. Another type of disagreement is exemplified by cases of mistaken identity, cf. Donnellan (1972); Kripke (1977): if you mistake Smith for Jones and say (pointing at Smith) “Jones is raking the leaves.”, I can disagree

Thus we see that agreement can be deceptive. People agree in the assessment of the same sentence but it may be quite different propositions that they thereby agree to. Disagreement however can be very productive in giving us an opportunity to discover that we essentially mean different things with the same words.

4. PRIVATE LANGUAGE

A language is a set of signs, that is, a set of pairs $\sigma = \langle e, m \rangle$, with e the expression and m the meaning of σ . So, a language is a relation (not necessarily a function!) between expressions and meanings. The predicament is that there is no unique meaning given to the expressions of a language. Everyone seems to have his own. This is essentially what Putnam argued, following Quine (see Quine (1960), Putnam (1988)).¹³ This position also enters the discussion in syntax under the name microvariation. So, John and Marcus are technically speaking talking different languages. Differences exist at all levels. Here, we focus on semantics. To simplify, we even assume that the languages of the individuals are identical at all other levels except for semantics; so their phonology, morphology and syntax are identical. Indeed, speakers of any language may share some morphology and grammar, but may have different ideas about what certain expressions mean. The effects of this distinction are particularly manifest when we turn to speech acts. A speech act involves several people, and thus presupposes that the transmission of meanings is in some ways effective. Vanderveken says that “[a] promise is a commitment that is made to a hearer to do something, with the special preparatory condition that it is for his benefit, and which is made in a way that creates an obligation for the speaker to do what he says” (Vanderveken (1991), Page 155). Of course, the question at issue here is what commitment is being made with an utterance, and therefore what the speaker is thereby obliged to do. Suppose some politician has promised to bring down the unemployment rate to under 8 percent. Suppose that official statistics show that the unemployment rate is 7.8 percent. It seems, then, that he has been somewhat successful. Yet would we still think so if we learned that it was achieved by introducing tougher laws so as to fill up the jails? For technically an inmate is not unemployed, so rather than creating jobs for people, stacking them in a prison cell achieves the same for the statistics. But

by saying “No, that’s not Jones, Jones is in hospital right now.”. In this case what I disagree with is not your actual statement, but with the presupposition that the person raking the leaves is the person we both refer to by saying “Jones”. Note also that if you accept my authority on Jones’ whereabouts, there is no need for you to adjust your usage of “Jones”, unlike in the peak-oil case. A third type of disagreement is exemplified by cases involving evaluative predicates like “I dis/like it”, where the disagreement is triggered by diverging responses (attitudes, feelings, etc.) towards an object, cf. Stevenson (1944). Yet another type of disagreement may be caused by vague terms, eg. if we disagree about whether or not George W. Bush is an old man. One relevant difference between the last two cases is that in the case of (at least some) evaluative statements there is only one authoritative judge, whereas in the case of vague terms this is not the case.

¹³We take the problem of radical translation one that not only haunts linguists in foreign settings but also children when they learn what their parents are trying to tell them.

maybe we others think that this is fishy. Are we justified in thinking so or does our politician have a line of defence? ¹⁴

We think it is not straightforward to say whether our politician has been successful or not and whether he should be held accountable for it. Any mismatch in understanding of the term “unemployment” actually creates a different reading of what counts as success. Thus, in promises (as in all other speech acts) we face a problem of accountability: what is the exact proposition for which speaker should be held accountable when issuing a promise? Of course, as the proposition is coded as a sentence, our problem is to find the relevant meaning of the sentence. Thus, speaker roles enter as a parameter of interpretation. We shall now work out some details of this.

Following Kracht (2010) we distinguish phatic and noetic acts. A noetic act is the act of acknowledging some mental attitude towards a proposition, such as agreeing with it or rejecting it. The proposition however is always mediated through an expression so that ultimately the attribution is of the expression, with the intention that it be of the proposition so expressed. A phatic act however is public and performed by means of speaking. Phatic acts are public acts. They can but need not express a corresponding noetic act. A speech act requires among other speaking in public. As there are several speech acts, so there are different noetic acts. However, we shall deal here mainly with *announcements* (the speech act of declaring that something is true) and *judgements* (the noetic act of agreeing to a proposition). Each of the two requires a person π . The phatic act of π announcing that φ is written “ $:-_{\pi} \varphi$ ” and the noetic act of π judging φ true “ $\vdash_{\pi} \varphi$ ”.¹⁵ The notation is not explicit on some parameters that might be needed on occasion such as time and addressee (for announcements). They will be added on need. Also, note that Kracht (2010) does not distinguish in the notation between acts and dispositions. We shall return to that question below.

Now suppose that John’s language contains $\langle e, m_1 \rangle$ but not $\langle e, m_2 \rangle$, while Marcus’s language contains $\langle e, m_2 \rangle$ but not $\langle e, m_1 \rangle$, then John means something different by using e than Marcus. Now, write “ \vdash_j ” for the judgement operator of John and “ \vdash_m ” for the judgement operator of Marcus. Then “ $\vdash_j e$ ” has to be taken as John’s consent that m_1 , while “ $\vdash_m e$ ” has to be taken as Marcus’s consent that m_2 . This seems clear. Let us now turn to an announcement. Is the announcement “ $:-_j e$ ” meant as an announcement of m_1 or of m_2 ? In plain words, if John is to announce “ e ”, would we interpret this using his own words or someone else’s? We venture a guess that the rule is that we take John to mean what his own words mean to him even though he is speaking to someone else. This is so even if we do not know for a fact what exactly the words mean to him. For usually it does not matter much.

¹⁴ Actually, the case we are describing is quite real. The US government has in the past adapted its definition of unemployment, inflation and other economic measures to make the situation look better. It is therefore no longer the case that one can simply take official unemployment rates of different countries and compare them since the internal reporting mechanisms are different. For more background look at the website “Shadow Government Statistics”, <http://www.shadowstats.com>, by John Williams.

¹⁵ “ \vdash ” represents Frege’s judgment stroke.

However, take our politician as an example. In assessing his performance we will eventually ask the following question: was our politician sincere in his promise? In other words, did he himself think that unemployment goes down as the population of prisons increases? Note that if his understanding of the words is too different from ours he will risk his job regardless of how sincere he had been. Success in a job cannot be redefined by skewing the semantics. Maybe that this is also part of the nature of contracts: you tacitly assume that both parties understand the relevant terms (or, as it sometimes happens, you have them sign that they do or at least think that they do). Yet, it will make *some* difference to us whether or not he was sincere. Even though it is hard for us to know what someone really thinks, this *is* a question we will be asking when we consider whether he has kept his promise.

But sincerity becomes something of an unclear notion in this connection. We can imagine a situation where the politician was sincere. Maybe he really thought this is a way to reduce unemployment, say, because he thought that these people shouldn't be employed anyhow. Still it might be that we still have the feeling of betrayal. And this is the case when we additionally think (or know) that our politician knew well that his promise was bound to be understood in a different way. In that case, knowing that the other side will understand his words in ways beneficial to him (but not to us) is a different way of failing to be sincere. Here, the complaint is about exploiting the knowledge in meaning differences for one's own benefit. This very often happens when companies exploit people's inability to understand legal or technical jargon. (In fact, the idea of changing the definition of unemployment or inflation mentioned above in Footnote 14 is precisely of that kind.) The latter kind of problem will not be discussed here in depth but clearly shows the complexity of the problems surrounding accountability.

The apparent privacy of language is in conflict with its primary function, namely to communicate. What is needed is that there are rules of language use and accountability. For example, there is a rule that says that in a public announcement we are accountable for the proposition that we just uttered.¹⁶ If we claim that a given sentence is true, we are taken to have claimed the truth of the proposition which that sentence means. This is an instance of the Maxim of Quality (quoted from Grice (1975)):

- [Maxim of Quality] Try to make your contribution one that is true, specifically:
- (1) do not say what you believe to be false,
 - (2) do not say that for which you lack adequate evidence.

These maxims are obligations. This is where the accountability enters. The community sanctions disobedience of these maxims.

But now look at the expression "make your contribution one that is true". What is a "contribution" and what is required for it to be true? Obviously, contribution here means utterance and "true" means that the proposition expressed by it is true. Although we will develop a somewhat refined picture, this is good enough for the purpose at hand. So, it is not utterances but the proposition that they express that

¹⁶References to Vanderveken, Krifka.

can be true or false. So we must ask what that proposition is that the utterance expresses. The first attempt at resolving the issue is to say that the proposition is to be calculated in speaker's language.¹⁷ Thus, if π 's language contains $\langle e, m \rangle$, it is a rule that from “ $:-_{\pi} e$ ” π is accountable for m . This is because there is a general rule of interpretation dictating that the announcement of e by π is (in normal cases) tantamount to expression of the judgment “ $\vdash_{\pi} m$ ”.¹⁸

Now, suppose John wants to communicate “ m_1 ”. Since the meaning itself cannot be communicated he must choose what we call an *envelope*. So he chooses the sentence “ e ” as an envelope and sends that over to Marcus, who then unpacks it and finds, well, “ m_2 ”. John stands accused of breaking the Maxim of Quality. But the problem is that the maxim does not talk about choosing envelopes. It only talks about contributions, truth and falsity. Some work is needed to straighten this out.

First, let us note another problem. In Balbiani et al. (2008) it is claimed that when a proposition is announced in public then it is mutually known to everyone. It becomes common knowledge. Applying this to the present context derives the apparent contradiction that after “ $:-_j e$ ”, that is, after John's announcement of e , e becomes known to everyone, or, more cautiously, that it is known to everyone to whom John announced “ e ”. In fact, there is *no* contradiction here, because what “ e ” stands for is what John means by using it. So the contradiction arises only if, say, Marcus attempts to deduce that therefore “ m_2 ” is common knowledge. He cannot safely do so since as a matter of fact if John is sincere he would rather judge “ m_1 ” to be correct. Passing from envelope to message is not an innocent step.

Notice that we allow for two different judgements: “ $\vdash_{\pi} e$ ” as well as “ $\vdash_{\pi} m$ ”. Thus, we may give our consent either to some proposition (here “ m ”) or to some expression, “ e ”. By contrast, an announcement can be made only using an expression. Whence “ $:-_{\pi} m$ ” is simply impossible (there is no mindspeak). Assuming—as we do here for simplicity—that the expressions of the language are uniform across speakers, all speakers share the same expressions but may have different views on their meanings. There are ways of objectifying meanings, but that is outside of the concern here.

5. THEORY OF LANGUAGE

Now, there are several issues that we must deal with. Strictly speaking, if our understanding of words is no longer shared, there is no guarantee that meanings can be communicated. Say John wants to communicate meaning “ m ” and chooses “ e ” to code it because his language contains $\langle e, m \rangle$. There is no way to guarantee

¹⁷This may be seen as uncooperative, but maybe an excusable form of uncooperativeness. We shall talk more about that problem below. Generally, speakers are not assumed to know what the words mean for others, or more exactly, we assume that by default everybody talks the same as we do. Only when evidence to the contrary appears do we dissociate the meaning and start to be concerned about which language is to be used. On how to strategically deal with this new situation see below.

¹⁸This assumes that there is no other meaning that e has in our language, a possibility that needs to be taken into account as well.

that we take John’s utterance to mean “*m*”. And this may be due to several reasons other than error or lie.

- (1) Marcus might not even know *that* John meant something else ~~as Marcus does~~. **different from what he (Marcus) did**. In other words, he is assuming that John’s words mean the same as his when in fact they do not.
- (2) Even though Marcus does know that John means something different, he might not be able to tell what meaning John associates with his words.
- (3) Marcus knows what meaning John associates with the words, but this time John uses the words in a different meaning without Marcus knowing. For example, he might be trying to adapt to Marcus’ way of talking.

Let us start with the first of these issues. To be able to represent the facts, we distinguish between words of the language and concepts. Thus, /oil/ is a word of English, while oil’ is a particular concept. In a first stage we take them to be properties of individuals, so that when A and B associate the concept oil’ with the word /oil/, they are actually using the same language. Notice that there are two more concepts at play, namely c-oil’ “conventional oil” and u-oil’ “unconventional oil”. Furthermore, the following holds

$$(3) \quad (\forall x)(\text{oil}'(x) \leftrightarrow \text{c-oil}'(x) \vee \text{u-oil}'(x))$$

Thus oil is either conventional or unconventional. Since it cannot be both, we also have

$$(4) \quad (\forall x)\neg(\text{c-oil}'(x) \wedge \text{u-oil}'(x))$$

In plain words, nothing is both conventional and unconventional oil. Now, the fact that John and Marcus speak different languages is represented as follows:

$$(5) \quad \text{Marcus: } \{\langle /oil/, \text{oil}' \rangle, \dots\} \qquad \text{John: } \{\langle /oil/, \text{c-oil}' \rangle, \dots\}$$

For simplicity, let us assume that the meaning of the other words is the same, so that we both agree, for example, that “peak P” is the event where the world produces the maximum amount of P throughout history. Thus, “peak mercury” is the event of the world producing historically maximal amounts of mercury (which happened around 1975). This is a crucial ingredient of the story. Without some agreement (presumed or factual) on the meanings of words communication is downright impossible. It may at some point emerge that we are wrong about that, too, by which time we have hopefully settled at least the problem of “oil” successfully.

Since the truth of the sentence (1) depends on what meaning /oil/ has, we can now easily see how it is that John and Marcus disagree without there being a contradiction. Moreover, in the absence of any knowledge to the contrary, both John and Marcus shall assume that the other uses the words with the same meanings. Our conflict over (1) is actually an opportunity for us to discover that this is not so. Upon closer discussion and agreement over the facts (which often does not arise so easily) we conclude that John uses a different language. Moreover, after Marcus learns from John that his unitary concept of oil is actually a union of different

concepts he can add that to his knowledge. Without knowing much about what distinguishes conventional and unconventional oil apart from what Marcus has been told he can still go ahead and appreciate the difference between their respective usages.

Now, our representations change significantly. For now Marcus has knowledge about John's usage of the words. This needs to be represented. Let $\text{means}'(x, y, z)$ be a ternary predicate between words, people and concepts. Then after our discussion we agree that the following are true:

$$(6) \quad \text{means}'(/oil/, j, c\text{-oil}'), \quad \text{means}'(/oil/, m, oil').$$

Both John and Marcus know this now (and we even share this as mutual knowledge).¹⁹

6. CALCULUS OF JUDGEMENTS

Kracht (2010) also introduced a version of a calculus of mental reasoning called *gnosis*. A central element of this calculus is that of a judgement. In uttering a sentence we are communicating a judgement. When we say that John is tall, we are not simply issuing the proposition. We are also making claims about its truth. While the calculus itself studied the mental process of the analysis of sentences, it can also help us in showing how to resolve the present dilemma. Essentially, it claims that a statement is a public announcement that we judge something as true. An utterance “ $:-_{\pi} e$ ” is *honest*, if $\langle e, m \rangle$ is in π 's language and “ $\vdash_{\pi} m$ ”. Instead of saying that $\langle e, m \rangle$ is in π 's language we can also say that $\text{means}'(e, \pi, m)$. We assume here that all utterances are honest.

So, if John is honest and utters (1) we can deduce (ignoring time here)

$$(7) \quad \vdash_j \text{Peak oil happened in 2006.}$$

If Marcus agrees to (1) this implies instead

$$(8) \quad \vdash_m \text{Peak oil happened in 2006.}$$

Or, if Marcus disagrees with (1), then it is this:

$$(9) \quad \neg_m \text{Peak oil happened in 2006.}$$

Here “ \neg_m ” is the rejection operator. This can be turned into

$$(10) \quad \vdash_m \neg(\text{Peak oil happened in 2006.})$$

(Observe that we are heavily mixing natural language with formal language here.)

The crucial element is now this. Suppose we are tracking the meaning of the phrase “peak oil happened in 2006” down to its parts. Then that requires finding the meaning of “oil”. That in turn may require us to say that a particular substance

¹⁹Of course, every discovery of this kind is just preliminary. It is not guaranteed that after introducing the new notions into Marcus' language they have settled the question of their meaning beyond doubt. But let that be put aside here.

produced at some place at some time is or is not oil (say, the biodiesel of the farmers in the Midwest). Let this substance be s . Then we have

$$(11) \quad \vdash_j \neg \text{oil}(s) \qquad \vdash_m \text{oil}(s)$$

And ultimately our disagreement could be resolved by tracking it down to some physical facts where we hope to have no dispute about their reality. That is, we hope to find facts we agree on but can make a difference for our terminology.

This now creates further trouble. How do we get ourselves out of the mess if words are to be interpreted in the language of the speaker? How can we negotiate our differences if there is no way to produce such explicit facts? Fortunately, there are ways around this. One can use qualifiers such as “in your/my/Marcus’s sense”, “what you/I/Peter call/s” and so on to actually shift the interpretation. So, our final agreement can be sealed by Marcus saying to John

$$(12) \quad \text{Peak oil in your sense did happen in 2006.}$$

and John saying to Marcus

$$(13) \quad \text{Peak oil in your sense did not happen in 2006.}$$

Let us look somewhat closer at how this is possible. Of course, the translation of (12) is *not* this:

$$(14) \quad \vdash_m \text{Peak oil happened in 2006.}$$

because the shift in meaning is unaccounted for. Nor is it actually

$$(15) \quad \vdash_j \text{Peak oil happened in 2006.}$$

and this is because it is Marcus who makes the claim, and it is John’s meanings that Marcus gives to the words (or, to be exact, to the phrase “peak oil”). To show the difference, let us introduce a new word “joil”, which in Marcus language means what oil means in John’s language. Then a better approximation is

$$(16) \quad \vdash_m \text{Peak joil happened in 2006.}$$

Since the intended meaning of “joil” is “oil in John’s sense”, John has a say in whether Marcus uses the words correctly. For if someone shows around a substance that John calls “oil” while Marcus claims it is not “joil”, then Marcus is obviously wrong. Here however Marcus did get the facts wrong, since he did not use the words in their correct sense, for they are expressly talking about John’s own language. As the discussion above revealed, there already is a word that could be used in place of /joil/, namely “conventional oil”. After the discussion between John and Marcus it will hopefully be clear that they agree on the meaning of “conventional oil”. And so (16) could be replaced by (17).

$$(17) \quad \vdash_m \text{Peak conventional oil happened in 2006.}$$

However, the term “conventional oil” is clearly not the same as “oil in the sense of John”.

To successfully represent this, we have several options. The first option leaves the meaning relation implicit. In this model, a language is stored as a relation between exponents and meanings. Additionally, for every person, we may have a separate entry for their language. Marcus own entry looks like this:

$$(18) \quad \text{self: } \{\langle \text{oil}, \text{oil}' \rangle, \dots\}, \quad \text{John: } \{\langle \text{oil}, \text{joil}' \rangle, \dots\}$$

The other option is to encode the knowledge about other people as factual entries. Then there is only one language, speakers own language, and everything else is meaning postulates. For example, there will be a meaning postulate such as “For John, ‘oil’ means light sweet crude oil.”. The latter approach has the additional flexibility that it can even deal with iterations of beliefs. For example, John might think that Peter thinks that “oil” also means “palm oil”. On the other hand, it has the disadvantage of only mediating the meanings and not handing them out directly. John’s concept of oil is mediated here in Marcus’ own terms, while it is in principle possible that Marcus learns a new concept corresponding to John’s meaning of “oil”.

In Kracht (2010) a state is defined to be a triple $\langle T, S, A \rangle$, where T is the knowledge base, S a sequence of temporary assumptions, and A a cell containing maximally a single judgement. The calculus developed in Kracht (2010) concentrated on the manipulations of S and A since it was geared to explain derived judgements. Here we shall instead focus on T . T consists of conditional judgement dispositions of the form

$$(19) \quad \varphi_1, \dots, \varphi_n \succ \chi$$

These are *dispositions*, not actual judgements. Such a disposition means the following: if φ_1 through φ_n are true, then upon apprehending χ it is judged to be \succ . An example is

$$(20) \quad \text{c-oil}'(x) \vdash \text{oil}'(x)$$

which says that whatever is conventional oil is also judged oil. We should perhaps caution the reader that the judgement symbols now do double duty: they represent judgements as well as judgement dispositions. This can be avoided by using a special notation. On the other hand, the judgement acts never are conditional and cannot be members of T . And this is how they are distinguished here.

These dispositions function as follows. When we have reached the conclusion that “c-oil'(a)” is true, we may trigger the rule (20) and establish the judgement “ $\vdash \text{oil}'(a)$ ”. An entry in the dictionary like $\langle / \text{oil}' /, \text{c-oil}' \rangle$ can be reduced to a pair of judgement rules, called conversion:

$$(21) \quad \text{oil}(x) \vdash \text{c-oil}'(x), \quad \text{c-oil}'(x) \vdash \text{oil}(x)$$

Notice that we are mixing words of the language with concepts. Now back to the discussion between John and Marcus. In formal terms, the initial states of John and Marcus are as follows:

$$(22) \quad \begin{array}{l} \text{Marcus: } T = \{\text{oil}(x) \vdash_m \text{oil}'(x), \text{oil}'(x) \vdash_m \text{oil}(x)\} \\ \text{John: } T = \{\text{oil}(x) \vdash_j \text{c-oil}'(x), \text{c-oil}'(x) \vdash_j \text{oil}(x)\} \end{array}$$

7. CONCEPTS

The previous discussion was somewhat misleading in that it presupposed a uniform language of concepts. So, it seemed as if John is using a different concept for translating /oil/ than Marcus since we used a different name. But what relevance does that have? First of all, the concepts cannot be communicated. The names are just labels of an effective property. That is to say, the concept of oil that Marcus uses is the same concept of oil that John has if (and only if) they agree in all instances that some substance qualifies as oil. The name used internally for that concept is irrelevant, for in talking to each other we could just as well use the words themselves as proxy for the concepts.²⁰ Thus, the conversion of “ $\vdash \text{oil}(a)$ ” to “ $\vdash \text{oil}'(a)$ ” is somewhat redundant. However, this only applies to one’s own concepts. Performing such a conversion for an utterance of John’s runs the risk of equivocation: his judgements cannot be reduced in the same way unless we make the assumption that he uses the words for the same concepts (an assumption that we are often willing to make). Thus, suppose Udo has concluded that “ $\vdash_j \text{oil}(x)$ ” (say, from “ $\vdash_j \text{oil}(x)$ ”). Then he is not entitled to conclude “ $\vdash_j \text{oil}'(x)$ ” because the judgement operator in his conversion rules is “ \vdash_u ” and not “ \vdash_j ”. Similarly for Marcus.

However, naming Marcus’ John’s internal concept of “oil” oil’ is dangerous in that it suggests that he uses the concept in the correct way. For our current purposes it is a more or less descriptive label, used from an outside perspective to name the proposition. (We could use Udo’s language here.) Uniformity is then guaranteed, since we are using the names consistently across speakers.

Let us go over the steps in the discussion once more. *Hier wuerde ich ein bisschen genauer auf die einzelnen Schritte eingehen, so wie ich es am Ende des Papiers vorschlage. Wichtig waere die Erklarung warum Marcus seine Aussage zurueckzieht, naemlich weil er sich festlegt, den Satz als wahr zu halten, und dies spaeter nicht mehr tut. Fuer die Erklarung sind mE. folgende Prinzipien relevant: COMMITMENT (man verpflichtet sich, die Ausdruecke korrekt zu benutzen und den Satz als wahr zu halten), RELIABILITY/SINCERITY (erlaubt es Marcus, aus Johns Announcement zu schliessen, dass er einen bestimmten Satz fuer wahr haelt), SAME LANGUAGE PRESUMPTION (erlaubt es Marcus folgendes zu schliessen: wenn John den Satz wahr haelt, dann stimmt er dieser Proposition zu), DETECTION OF VIOLATION OF SAME LANGUAGE PRESUMPTION,*

²⁰Putnam has pressed the issue of internal representations in Putnam (1988). In his view, the internal representations completely underdetermine what we call here the ‘effective concept’. The idea that the concept has something of a recognisable internal name that reveals anything about their effective properties, is wishful thinking according to Putnam.

AUTHORITY (violations of **SAME LANGUAGE PRESUMPTION** can be settled by authority), **RETRACTION** (triggered by inconsistency between revised judgements and old commitment) The initial state is (22). We ignore John's state for a while. Now, suppose John says:

(23) Peak oil happened in 2006.

Marcus may enter this into his theory as follows:

(24) Marcus: $T = \{\vdash_j \text{Peak oil happened in 2006.},$
 $\text{oil}(x) \vdash \text{oil}'(x), \text{oil}'(x) \vdash \text{oil}\},$

This says that John consents to the statement /Peak oil happened in 2006./. The index “ \vdash_j ” is needed here. We can remove the judgement sign by entering instead the following, where t is the time of utterance of (1):

(25) $\vdash_m \text{states}'(j, t, \text{Peak oil happened in 2006.})$

The index “ m ” can now be dropped. The ensuing discussion with John reveals that Marcus' concept of oil is to be divided in conventional and unconventional oil. Suppose Marcus believes that what John says is true. Even if he does not know exactly what conventional or unconventional oil is he can still update his theory as follows:

(26) Marcus: $T = \{\vdash_j \text{Peak oil happened in 2006.},$
 $\text{oil}(x) \vdash \text{oil}'(x), \text{oil}'(x) \vdash \text{oil},$
 $\text{oil}'(x) \vdash \text{c-oil}'(x) \vee \text{u-oil}'(x),$
 $\text{c-oil}'(x) \vdash \text{oil}'(x), \text{u-oil}'(x) \vdash \text{oil}'(x)\},$

Finally, when John tells Marcus that for him “oil” means conventional oil, he updates as follows:

(27) Marcus: $T = \{\vdash_j \text{Peak oil happened in 2006.},$
 $\text{oil}(x) \vdash \text{oil}'(x), \text{oil}'(x) \vdash \text{oil}, \text{oil}'(x) \vdash \text{c-oil}'(x) \vee \text{u-oil}'(x),$
 $\text{c-oil}'(x) \vdash \text{oil}'(x), \text{u-oil}'(x) \vdash \text{oil}'(x),$
 $\text{oil}(x) \vdash_j \text{c-oil}'(x), \text{c-oil}'(x) \vdash_j \text{oil}(x),$
 $\text{oil}'(x) \vdash_j \text{c-oil}'(x) \vee \text{u-oil}'(x),$
 $\text{c-oil}'(x) \vdash_j \text{oil}'(x), \text{u-oil}'(x) \vdash_j \text{oil}'(x)\}$

Recall that the different uses of oil' refer to the same effective concept even though they are being used in connection with different people. Notice also that updates can also include revisions, that is, they do not have to lead to increasing knowledge. But that is really an orthogonal issue.

John's theory will be a mere mirror image of Marcus' theory.

With this theory Marcus not only possesses his own theory of meaning but also a fragment of John's theory of meaning, so he can understand John's words in his own terms, and, conversely, make himself understood to John in a better way.

We have discussed above how that can be done. Marcus could say

(28) Peak oil in your sense did happen in 2006.

This is tantamount to using “oil” in the way John does. Marcus cannot use (1) for the reason that the words are interpreted (by default) in my language. Which language is to be used in interpreting the words in an utterance is subject to rules, which we shall now discuss.

8. THE PRAGMATICS OF AUTHORSHIP

So what do people do in face of the fact that everybody speaks his own language? Above all, we claim, there is an assumption that the variation is not too great.

Assumed Identity.

Unless you have reason to the contrary, assume that a particular person has the same language as you do.

This is not a maxim. It does not say what the game of communication *should* be like, it rather says what people *do*. Among other things they assume that others are the same as they are. Unless there is evidence to the contrary. Variation is not randomly attributed, but only where the evidence suggests it.

Let us therefore turn to the question what happens if differences are being assumed. Again, there is a default case and it is this.

Default Interpreting Language.

Words are interpreted in the language of the utterer by default.

More exactly, it is not the utterer but the *issuer of judgement* or *author*. We are thinking here of cases in which the one making the utterance (“impersonator”, see McCawley (1999)) is not the one issuing the judgement (“author”). Direct reports are such cases, as are cases in which a prepared speech is read out aloud by someone. In these cases, the subject of the phatic act is different from the subject of the noetic act.

The default can be overridden in various ways. One is the official establishment of a different language. This happens in well defined settings. For example, in a legal or technical dispute certain words have to have special meaning and using them in a private meaning is illicit. This means that there is a technical language which people are trained to use (say, at a university) and which they are expected to talk in certain circumstances known to each other.²¹

In the same way, the default principle can be overridden by John and Marcus by adding to it a special proviso that regulates the meaning of words when they talk to each other. This proviso may take various forms. It can say, for example, that the meaning of “oil” is fixed to “conventional oil” when they talk between each other but not when, say, Udo is present (whatever reason that might have). Or it may be that they agree to use a specific technical language of petrochemical engineers.

²¹In this connection it is also interesting to take a look at the Plain Language Movement. The idea is that legal documents are often too complex and unintelligible to a layperson. This is not an innocent affair given the fact that people are constantly required to sign documents whose content they can barely be assumed to understand. Try downloading software and ask yourself what the terms and conditions actually do or do not require you to know or do ...

However, mostly casual conversations do not proceed in this way. There is no official procedure by which a common language gets established. There are several reasons for this. One is that the precise nature of such an interpretive principle is hard to pinpoint. We may simply say that there is something of a ‘bilateral language’, a language that is used in a special communicative setting, say, if Marcus talks with John. But talking about such a language when the meaning of only a handful of words is at stake is perhaps going too far. For it means that in addition to having our own private language we also talk numerous ‘bilateral languages’. Moreover, it is difficult to understand this as a process of a language coming into sudden existence. Rather, it is the effect of long or repeated exchanges, of tuning in on each other. There is thus no definite point at which we can say that such a language exists and can be entered into a rule of interpretation. And, finally, establishing a common understanding may simply be a unilateral affair. It might happen that Marcus gives up his private language when talking to John and uses a ‘bilateral language’, while John continues to use his own private language in talking with Marcus. The net result is that Marcus never signals to John that he normally uses the words differently, and so John will keep thinking that they are in perfect agreement; which in a certain sense is also true.²²

Thus, the interpreting language is shifted under special circumstances. For this shift, special rules need to be put in place. However, there are also explicit ways to change the interpreting language. This is done by what we call *deflectors*.

Deflection.

Deflectors possess the power to shift the interpreting language. Deflectors are among other “in X’s sense”, “as X calls it”, and direct quotation.

Note that these principles stand outside the normal principles of semantic interpretation.

Notice the distinction between direct speech reports and indirect speech reports. A direct speech report does not tolerate the substitution of words, and the words are to be interpreted in the language of the author of the speech, not of the one reporting it. Indirect speech reports are more tolerant.²³

9. EVALUATIVE PREDICATES

Recently, there has been a discussion in semantics concerning words that require judgement such as “good”, “wonderful”, “awesome” and the like, see Glanzberg (2007), Sæbø (2009) and references therein. It has been argued that they require an extra argument place for the ‘judge’, because people differ for example in what they call “good”. From our perspective, the issue of evaluatives is tangential to what we have to say here, as it will simply further complicate matters. Essentially, what has

²²John in his turn can realise that Marcus’ language is different from his and change to his usage. If both happen at the same time they are back to where they started, except with roles exchanged. One can only hope that the situation is suitably asymmetric (John the expert, Marcus the novice) that this will not happen.

²³Cf. among others Maier (2009a,b)

been argued is that the difference in calling this or that a good car is not due to a difference in meaning of “good” but rather in the fact that good is parametrized for the person issuing the judgement. Thus, as we will see, Udo’s concept of “good” may be different from John’s, while both allow for variations as to what may be good for someone. The question now arises whether the addition of a judge is at all justified since, as we have seen, the same holds for practically all words. What makes “good” different from “car” is maybe only the expected variation in the meaning of judgement. We do not expect disagreement to arise about whether this or that vehicle is a car, while we may heavily disagree about whether it is a good car. If that is so, then maybe the addition of an argument place for the judge in “good” is no more justified than an argument place for the judge in “car”.

Arguing that some predicates do contain an extra argument seems to be an extreme move, though. For it does seem that whether something is a good car is not open to arbitrary judgement, and so the idea that everybody is one’s own best judge on what is good seems to be extreme. If Peter describes some old rusty vehicle that has trouble starting the engine as a good car we are not impressed. We think that even Pete cannot think that way. He must be mistaken in his idea about “good”. But if that is so, he is not alone in charge of goodness of cars, it seems.²⁴

Still, as people have argued, there is data to be accounted for that show a difference between words with an evaluator and one without. It has been noted, for example, that there is a difference between German “glauben” (believe) and “finden” (find) in that the latter reports a purely subjective judgement while the former is about objective reality. So, when we use “glauben” what we report as our belief is open to scrutiny. It is something that can be experienced. For example, the following sentence reports that someone believes there will be reelections next year, and all it takes is to wait for a year and find out.

(29) Ich glaube, dass es im nächsten Jahr Neuwahlen gibt.

It would be inappropriate to use “finden”, though.

(30) #Ich finde, dass es im nächsten Jahr Neuwahlen gibt.

One explanation for this contrast is that “finden” as opposed to “glauben” expects the complement sentence to require a judge as an extra argument. Since the statement that there will be reelections does not call for such an argument, it cannot be used as a complement. For notice that when we do have a judge, “finden” is appropriate:

(31) Ich finde, dass es im nächsten Jahr Neuwahlen geben sollte.

²⁴Of course, as we repeatedly noted, nobody is in charge of someone else’s language. This talk presupposes that there is an objective language which has authority over our use, and that we should at least in principle come to know. In absence of that we are left with only the urge to converge on semantics. The way we can do that is by mutual (or unilateral) acceptance to change our semantics in view of disagreement. Communication therefore also serves to negotiate the position of “semantic expert”.

Note similarly the following contrast:

- (32) a. Ich finde, der Urlaub war super.
b. ?Ich glaube, der Urlaub war super.

Here, the evaluation of the vacations via “super” warrants the use of “finden” while “glauben” is less good here (the conveyed meaning appears to be different).

Matters are subtle. Notice first of all that whether or not something is open to empirical testing is not the issue. Even with certain nonempirical propositions, “finden” cannot be used:

- (33) a. Ich glaube, dass Gott existiert.
b. #Ich finde, dass Gott existiert.

This suggests that what is at stake is that there is an act of subjective judgement that must be central to the complement sentence. The existence of god does not require a judgement to be true even if it is hard to imagine how we can verify its truth.

Kant has made a distinction between “das Schöne” and “das Angenehme”.²⁵ The former, he explains, is not subject to subjective judgement while the latter is. That is, there cannot be a disagreement about what is beautiful while there can be disagreement about what is comfortable. The problem that we have with such explanations is that we do not see how it can actually tell us anything relevant about the meaning of these words. If the meaning of “comfortable” is something like “pleasing the senses”, then all we need is to fix the person whose senses are being talked about. The question is whether this person can in principle be different from the one issuing the judgement. That is to say: is it possible that in saying “this is a comfortable chair” we mean “comfortable for you, judging from my own standards”? And if so, does that warrant adding another argument in the semantics?

Whatever the answer, however, the claim here is not that the syntax/semantics provides an explicit slot for the judge. Rather, it is that the meaning of some constituent is different for different speakers. The additional slot for the judge simply adds another point of variation.

10. AGGREGATION

One problem in judgement is constituted by aggregation. Also groups may reach a judgement, but whereas for a ~~single individual~~ **single individuals** we are not so sure as to how they get to their opinions, for groups we have more practical experience. For example, speaking for John and Marcus they could announce

- (34) Peak oil happened in 2006.

Then this is neither a judgement by Marcus alone nor one of John, but rather a judgement of *both* John and Marcus together. Thus, it is formally different from

²⁵We owe this point to Carla Umbach.

(35) John and I think, Peak oil happened in 2006.

which is a claim that Marcus makes about what they both are thinking. However, (35) is also used to make explicit what (34) leaves implicit: namely, whose judgement is being reported.

Writing “ $j \oplus m$ ” for the group of people consisting of John and Marcus, and “ $\vdash_{j \oplus m}$ ” for the judgement operator of this group, (34) now reads

(36) $\vdash_{j \oplus m}$ Peak oil happened in 2006.

How are we to understand this? One possibility is to say that “ $\vdash_{j \oplus m} p$ ” is the conjunction of “ $\vdash_j p$ ” and “ $\vdash_m p$ ”. Thus, ?? is tantamount to claiming that both John and Marcus agree to /Peak oil happened in 2006./. It does not say that they think that peak oil happened in 2006 because the latter would require them to agree to a common content of the phrase as presented. So, we have an agreement in expression rather than meaning. It assumes that John and Marcus are agreeing to that sentence, it does not say that for them the sentence has the same meaning, to which they both agree. Thus, we find that the situation is much like an oft seen compromise where parties reach an agreement simply because all parties involved can agree to a content as worded even though it is patently clear that the associated content is not the same to everyone. Quite often however a different meaning is assumed, namely that all members agree to some proposition, whose envelope is appropriately chosen by some part of them.

Another problem is the quorum for aggregation. The default seems to be universal. A group thinks that P iff all members of the group think that P. But the larger the group and the more formal its composition the less transparent the judgement of the group becomes. A phrase such as “the citizens of Seattle think” or “the committee thinks” do not mean the same as “everybody in Seattle thinks” (with “everybody” literally meaning each and every one) or “every member of the committee thinks”. For the rules of coming to a decision can be complicated. In many cases a majority of members is sufficient, in other cases it may be a particular formula by which agreement is reached. Thus, if group judgement is based on a majority vote then “ $\vdash_{j \oplus u \oplus m} p$ ” is equivalent to the disjunction of “ $\vdash_{j \oplus u} p$ ”, “ $\vdash_{j \oplus m} p$ ” and “ $\vdash_{u \oplus m} p$ ”.

11. COMMUNICATIVE SUCCESS

There is a further problem of the present account that needs to be looked at. What it comes down to is that there is no way in which speakers can determine whether communication was successful. For unlike an external observer, who has access to all the meanings by the various agents involved, the speakers have no such access and therefore cannot guarantee that the message they want to convey is the one they are taken to convey by others. Nor can the listeners guarantee that any of them ends up with the same message as they do. Then why is communication so successful?

The short answer is: there is nothing to explain, the success is simply an illusion. There is, as far as we can see, no guarantee that communication is successful. Moreover, we deny that the theory that we have developed is in need to show that communication succeeds. The problem is that the success that we so often attest often enough does not withstand scrutiny. What does it mean, for example, that we agree that social reform is necessary in this country? Do we agree to the same concept, the same actions, the same moral values? We guess it is fair to say that we agree to the same words and yet it is likely that we do not agree to the same proposition. In everyone's view the communication was successful. But what does the success consist in? Maybe, strange as it may sound, it consist in agreeing to the same words, not the same concepts.

Paradoxically, the solution to the problem is therefore not that communication works but that it is presumed to work. We start with the assumption that everyone speaks the same language as we do. As long we are in agreement we merely see this as confirmation that this is so. When we are in disagreement, however, things get interesting. At this moment we get a chance to learn something new. It can be either new facts about the world or new facts about language and language use. All humans are fallible and have incomplete knowledge. So in communication we either encounter that someone can tell us new facts, or that he or she actually has the right facts where we had them wrong. Or we actually find that the dispute we had wasn't about the facts at all but about the way we describe them.

12. CIRCULARITY

Finally, we need to consider an obvious problem. The example that we have shown above suffers from a weakness: it is circular. How can it be that we effectively communicate the breakdown of communication with the very same language whose reliability is at issue? The answer to this is that the circularity is unavoidable and has to be accepted. In other words, there is no guarantee that the procedure we have shown above will improve the situation. All we can say is that in all likelihood things will get better.

So, in discussing matters relating to oil, we of course rely on the ability to communicate using words other than "oil". Basic vocabulary must be treated as commonly known and identical across speakers. Of course, there is no guarantee that this is the case, but it is unlikely that we disagree on basic words. We may therefore restrain our use of nonbasic words until we get a more satisfactory agreement on the terms in question. This is in essence what dictionaries do. They give definitions of words in terms of other words (though the latter to in fact often come from quite specialised fields). This is often easier said than done. How, for example, can we define "oil" such that it is clear to everyone what is and what isn't oil? The short answer is: this is impossible. Strangely, though, in the situation described above it is not necessary to come up with such a definition. It so turns out that one speaker, here John, actually comes up with the idea that there are two types of oil, conventional and nonconventional oil. This remark typically does two things: the first is that it establishes John as something of an expert. The heuristic (fallible, of course)

says that someone who asserts something like that is probably someone who knows more on the subject. This then has the likely consequence that the others consider his opinions henceforth more trustworthy than their own. And they will probably change their own language behaviour so as to follow John's. The rationale is clear: if John is the expert, he probably knows better than we do.

13. CONCLUSION

That we all talk different languages is not a new observation, yet it has so far not received the treatment that it deserves. Though in recent years there have been debates over evaluative predicates or contextualism, for example, they do not cover the problem of (semantic) *ideolects*. For they mostly deal with what expressions mean for a single speaker. Contextualism does not ask why it is that we understand words differently and how can we learn to avoid that, it asks how come a word assumes a different meaning in a different context. The evaluative adjectives on the other hand seem to point in that direction but still matters are different. For the idea is not that we all understand evaluative words differently. It is only that the semantics of these terms may require to ask about subjective values. To know whether "You like tennis." is true we need to know something about your feelings. That does not mean that your meaning of "like" differs from ours, only that you like different things. Similarly for adjectives like "good", "alleged" and so on, which seem to require an additional argument.

But our present case is completely different. We are looking at the issue of meaning variation across speakers, which may target any word whatsoever. There is no guarantee that you and someone else agree on the meaning of the word "and", for example. That such a variety exists is not only possible, it is to be expected if languages have to be learned. The fact that learning a language has to proceed in a limited time window is one argument, see Niyogi (2006). Another is that languages change, and the change needs to spread since it is not a top down process. No one has authority over language even though some institutions wish they had.

Faced with the potential disagreement even about basic words, we are caught in a vicious circle. We use communication to share ideas and at the same time we need communication to also learn the language. That process is never complete, we are only approximating each other. Hence the eternal gap that spawns between the ideal homogeneous language community linguists like to look at and the real, anarchic language community that exists everywhere where there is language. And yet, this circle has a solution quite like the hermeneutic circle: the more we talk to each other, the easier it gets, and the more we can come to understand each other.

14. THE ANATOMY OF DISAGREEMENT

- (1) PUBLIC ANNOUNCEMENT
John announced that 'Peak oil happened in 2006'.
- (2) COMMITMENT
John is committed to the correct usage of the words.
John is committed to the truth of "Peak oil happened in 2006".
- (3) RELIABILITY
John is reliable: therefore John judges the sentence "Peak oil happened in 2006" to be true
- (4) SAME LANGUAGE PRESUMPTION
John accepts the proposition that (peak oil)_m happened in 2006
- (5) MARCUS' KNOWLEDGE
Marcus rejects the proposition that (peak oil)_m happened in 2006
- (6) PUBLIC ANNOUNCEMENT
Marcus announces that 'I disagree, peak oil did not happen in 2006'.
- (7) COMMITMENT
Marcus is committed to the correct usage of the words.
Marcus is committed to the truth of 'Peak oil did not happen in 2006'.
- (8) After John's one minute lecture on the difference between conventional and unconventional oil, and what the term peak oil actually refers to.
- (9) UPDATE OF KNOWLEDGE BASE
if x falls under "oil" it is either conventional or unconventional oil
- (10) DETECTION OF LINGUISTIC DISAGREEMENT
by using "peak oil" John referred to peak conventional oil
by using "peak oil" Marcus didn't refer to peak conventional oil
- (11) This linguistic disagreement constitutes a violation of the SAME LANGUAGE PRESUMPTION and triggers the AUTHORITY question.
- (12) AUTHORITY
Marcus accepts John's authority: John's usage of "peak oil" is the correct usage, so "peak oil" should be used to refer to peak conventional oil.
- (13) REEVALUATION AND RETRACTION
Marcus accepts the proposition that conventional peak oil happened in 2006.
Marcus judges the sentence "Peak oil happened in 2006" as true.
Marcus judges the sentence "Peak oil didn't happen in 2006" as false.
- (14) By COMMITMENT
Marcus has committed to the sentence 'Peak oil didn't happen in 2006' being true.
- (15) Inconsistency between judgement and commitment triggers retraction by announcement:
- (16) ANNOUNCEMENT
Marcus announces: "I was wrong about peak oil: it did happen in 2006".

- (17) This explains why he things he was wrong, although at the time of utterance he was unaware of the distinction between conventional and unconventional oil.

How the concepts are related:

- without PUBLIC ANNOUNCEMENT there is no COMMITMENT
- without COMMITMENT it is impossible to explain why Marcus retracts he was wrong
- without COMMITMENT to using the words correctly (the same way as the others) there is no pressure on the interlocutors' usage to converge
- the SAME LANGUAGE PRESUMPTION follows from COMMITMENT: if both A and B are committed to using expressions correctly, and both know about each others commitment, then they can presume that they use expressions the same way.
- without AUTHORITY or NEGOTIATION, the violations of the SAME LANGUAGE PRESUMPTION cannot be resolved
- without REEVALUATION, statements cannot be retracted/corrected

REFERENCES

- Philippe Balbiani, Alexandru Baltag, Hans van Ditmarsch, Andreas Herzig, Tomohiro Hosi, and Santiago de Lima. 'Knowable' as 'Known After an Announcement'. *The Review of Symbolic Logic*, 1:305–334, 2008.
- Herman Cappelen and Ernie Lepore. *Insensitive Semantics: A Defense of Semantic Minimalism and Speech Act Pluralism*. Blackwell Publishing, Oxford, 2005.
- Keith Donnellan. Proper names and identifying descriptions. In D. Harman and Donald Davidson, editors, *Semantics of Natural Language*. Reidel, Dordrecht, 1972.
- Adamantios Gafos. Dynamics of phonological cognition. *Cognitive Science*, 30: 905–943, 2006a.
- Adamantios Gafos. Dynamics in grammar: Comment on ladd and ernstus & baayen. In M. L. Goldstein, D. H. Whalen, and C. Best, editors, *Laboratory Phonology 8: Varieties of Phonological Competence*, pages 51–79. Mouton de Gruyter, Berlin/New York, 2006b.
- Peter Gärdenfors. *Conceptual Spaces*. MIT, Cambridge (Mass.), 2004.
- Michael Glanzberg. Context, Content and Relativism. *Philosophical Studies*, 136: 1–29, 2007.
- Paul Grice. Logic and conversation. In P. Cole and J. Morgan, editors, *Syntax and Semantics 3*, pages 41–58. Academic Press, New York, 1975.
- David Kelley. A Theory of Abstraction. *Cognition and Brain Theory*, 7:329–357, 1984.
- Marcus Kracht. Gnosis. *Journal of Philosophical Logic*, 39, 2010.
- Saul Kripke. Speaker's reference and semantic reference. *Midwest Studies In Philosophy*, 2(1):255–276, 1977.

- Emar Maier. Japanese reported speech: Against a direct–indirect distinction. In New Frontiers in Artificial Intelligence, volume 5447, pages 133–145. Springer, 2009a.
- Emar Maier. Presupposing acquaintance: A unified semantics for *de dicto de re* and *de se* belief reports. Linguistics and Philosophy, 32(5):429–474, 2009b.
- James McCawley. Participant Roles, Frames, and Speech Acts. Linguistics and Philosophy, 22:595–619, 1999.
- Partha Niyogi. The Computational Nature of Language Learning and Evolution. MIT-Press, 2006.
- Hilary Putnam. Representations and Reality. MIT-Press, 1988.
- Willard van Orman Quine. Word and Object. MIT-Press, 1960.
- Kjell Johan Sæbø. Judgement Ascriptions. Linguistics and Philosophy, 32:327–352, 2009.
- Charles L. Stevenson. Ethics and Language. Yale University Press, New Haven, 1944.
- Daniel Vanderveken. Meaning and Speech Acts. Vol 2. Formal Semantics of Success and Satisfaction. Cambridge University Press, Cambridge, 1991.