Introduction

This paper outlines a semi-formal theory of meaning as use. Issues from various disciplines (pragmatics, poststructural discourse analysis, philosophy of language, situation semantics, dialogue management) are addressed by this theory, including:

(I) How can the later Wittgenstein's dictum "meaning is use" be used in a (semi-)formal account of semantics?

(II) How can the poststructural account of the dialectical interplay between langue (as a dynamic structure) and parole (as concrete language use) be fleshed out in more detail on the assumption of meaning as use?

(III) How can a Wittgensteinian / Kripkean account of rule following in concrete language use ("parole"), combined with an account of the process of grounding involved in spoken dialogue, contribute to answering (I)?

Background

This paper sketches an account of the interplay between language-as-system (langue) and language use (parole) [there may be so much interplay so that the distinction is useless]. This account should also throw light on language change and language learning (among other things).

One of the central tenets of structuralism is that the sign relation, i.e. the connection between words (linguistic form) and concepts is arbitrary. Firstly, the way that linguistic material is divided into words is arbitrary, Secondly, the way that the world is divided into concepts is arbitrary. Saussure focused on the study of language as a structure (langue), as he considered the concrete use of language (parole) too unruly for scientific study.

According to the postmodern descendant of structuralism, commonly referred to as poststructuralism, langue is continuously being affected by parole. In fact, the interaction is so pervasive that the very distinction between langue and parole is put into question. Now, if
or concepts determine how we understand the world (as assumed in a Whorfian interpretation of structuralism), this means that concrete language use changes our understanding of the world; communication is not (just) transmission of information.

Wittgenstein in 1953 offered the slogan "meaning is use" in opposition to the Tractatus view of "language as a picture of the world". The idea of meaning as use was most likely one of the inspirations for speech act theory as formulated by Austin. However, speech act theory as it is used in linguistics today often keeps the "language as a picture" idea and extends it - speech acts are assumed to have propositional contents similar to those of the Tractatus view of language.

While such theories have had some success, they are notably weak on modelling language learning and the way linguistic meanings change and are adapted to the situations in which they are put to use. The main reason for this is, arguably, the rigidity of the formal semantic representations that are used to capture meanings. In this paper, I attempt to develop and explore an alternative, semi-formal account of semantics that can capture these structural-dynamic aspects of meaning.

We know that languages change; words change their meanings etc. We also know that people can learn language. How does this happen? It must have something to do with parole, i.e. actual concrete interactions. How can we relate language change to conversational interaction?

**Meaning as (a function of situations of) use**

Following Wittgenstein's dictum "meaning is use", the theory initially models the meaning of a linguistic construct $c$ (e.g. word, phrase, sentence, proposition) as a function of the complete set $S$ of situations where that $c$ has been used (the "situational collocation" of $c$).

\[ [c] = f(S_c), \text{ where } S_c = \{s \mid c \text{ was used in situation } s\} \]

In this model, each individual $A$ has a record of the situations in which $A$ has perceived $c$. This determines $A$'s subjective idea of the meaning of $c$, written as

\[ [c]_A = f(S_{cA}), \]
\[ \text{ where } S_{cA} = \{s \mid c \text{ was perceived by } A \text{ as being used in situation } s\} \]

This is a very simplified account, that does not make explicit that members of a linguistic community in general believe (implicitly or explicitly) that the linguistic conventions that they follow are indeed shared by (most of) the other members of the community. Also, it does not take into account how perceived social norms affect the way language is understood, except insofar as they affect actual use. However, these formulations will do for our present purposes.

I do not initially pose any limitations as to how situations are described and what they include. For many constructs, the situation often will include the linguistic context of $c$, e.g. the grammatical construct in which it appears. I take propositions to be abstractions over spurious
differences between natural-language realisations, to the extent that such spurious differences indeed exist.

It should also be stressed that the meaning of a linguistic constructs are often specific to a certain activity, and that a construct can have different (although possibly related) meanings in different activities. Part of the aim of the semantic theory proposed here is to capture how language is used as a resource in setting up activity-specific language games, including situation-specific meaning-conventions.

Although (1) is an initial attempt at capturing "social" meaning in a community and (2) describes subjectivised meaning, this model regards language as essentially a social phenomenon, and social groups (language communities) as the relevant level of description. However, it is also the case that communities are aggregates of individuals where each individual is limited to his own perceptions and actions in taking part in the social world. The existence of social-linguistic communities should, then, be explained by the intersubjectiveness of their experience and behaviour enabled by the sharing (i.e. each having a private copy or version) of a common resource (language).

As defined above, \([c]_A\) is intended to describe a subjectivised version of the meaning-conventions of a shared language. However, it is important not to regard these as rules, in the sense of norms. In fact, this is exactly what KW argues against by claiming that rules are inherently social. Instead, the subjective versions, which I will refer to as meaning-dispositions, are to be regarded as complex dispositions for action. The possibility of discrepancies between individual disposition-complexes is a prerequisite for language change and language learning. (Meaning-dispositions as described here have affinities with ideas about "meaning potentials" (Allwood and others), which will be explored in future work.)

The intersubjective language of a group G can be described, roughly, as a set of (social) meaning-conventions emerging from (individual) meaning-dispositions shared to a sufficient degree by all or most members of G. The above equations assume the existence of linguistic communities which share (to a sufficient degree) ways of assigning meanings to linguistic constructs.

**Acceptance and rejection**

As part of the process of integrating an utterance into the "conversational scoreboard" (Lewis), the content of the utterance must be explicitly or implicitly accepted (Allwood, Clark, Ginzburg, Larsson). Alternatively, the addressee has the option of rejecting the (content of) the utterance. The choice between acceptance and rejection can be seen as providing an answer to the "acceptance question" related to the utterance, viz. "should the content of this utterance be accepted?".

In a similar way, I claim that the addressee of an utterance has, for each word or construct used in the utterance, the option of rejecting that particular use of it, e.g. because it was inappropriate in the current situation. Here, a conflict may ensue. In a simple case, the conflict will end with agreement as to whether this particular use was appropriate or not.

Rejection may be motivated in various ways, corresponding to various ways in which a construct can be inappropriate. For example, the noun phrase "horse" may be used to refer to
a donkey; a sentence "The donkey is green" may be false; another sentence "Every farmer who owns a colourless green donkey sleeps furiously" may not make any sense; and so on.

**Understanding, non-understanding, and misunderstanding**

Before a DP can decide whether to accept or reject an utterance, however, there must be some understanding of what the speaker meant by the utterance. If this does not happen, that particular occasion of use was not successful. Theoretically, we can choose to widen the definition of S_c to include all kinds of unsuccessful uses, including non-understood uses. Another choice is to add a further subset for non-understood uses.

There is also a question as to what counts as "one use" – is it a single utterance, or a sequence of utterances aimed at communicating a message? If the latter, the class of "non-understood uses" will be (perhaps significantly) smaller. However, for a sequence to count as a single use of a phrase P, it is important that no other phrase is substituted for P, or else it is a case of "giving up" on P.

A further issue is whether cases of misunderstandings (as long as they are not discovered) should count as successful when accepted. In other words, should we assume that an undiscovered misunderstanding will not affect the perceived meaning of the phrase that was misunderstood? Since this theory focuses on concrete interaction, and we are here talking about misunderstandings that have no effects (or in any case, no effects that are ever traced to the misunderstanding), this seems to be a reasonable choice, at least provisionally.

**Successful and unsuccessful uses**

We will here simplify matters by classifying uses into "successful" and "unsuccessful" uses, where the former are uses that are understood (or believed to be understood) and accepted, and the latter is all other utterances.

We want to include unsuccessful instances of use in the set of situations S determining the meaning of a construct. Clearly, rejected or not-understood instances will affect meaning differently than accepted instances. Therefore, it makes sense to partition S_c into two mutually exclusive subsets S_c^+ (positive situational collocation) and S_c^- (negative situational collocation):

(3)  
\[
S_c = <S_c^+, S_c^-> \text{ where} \\
S_c^+ = \{ s \mid c \text{ was successfully used in situation } s \}, \\
S_c^- = \{ s \mid c \text{ was non-successfully used in situation } s \},
\]

**Assertibility conditions and meaning accommodation**

Kripke (1982) attempts to reconstruct a Wittgensteinian argument concerning Rule-following and the (im)possibility of a private language. Some major components of this argument are:

- Rules only make sense in a social community
• Language is public
• Rules (conventions) guide the use of language
• Rules are essentially public; there can be no private rules and thus no private languages
• Truth conditions should be replaced by assertability conditions

According to the model proposed in the current paper, the general assertability condition of an utterance \( U \) in situation \( s \) is this:

\[
\text{All constructs in } U \text{ are appropriately used according to the shared norms (including our interpretation of } s). 
\]

(For language learners this condition may be less strict but this only reflects that they are not yet fully-fledged members of the linguistic community in question.)

For each construct used in \( U \), the addressee in a dialogue is (usually) expected to react if he thinks a construct in \( U \) was inappropriately used. If a breakdown occurs during interpretation of \( U \), it may be due to a detected mismatch on the part of the addressee (A) between the situation in which \( c \) was being used, and the meaning of \( c \) as regarded by A. A is now faced with a choice; either reject this use of \( c \) explicitly, or quietly alter A's view of the meaning of \( c \) so that \( c \) can be counted as appropriate after all. The latter process is a case of accommodation (Lewis).

**Appropriate and non-appropriate uses**

A central part of KW’s (KW = Kripke’s Wittgenstein) thesis is that previous uses do not determine future uses. All we have is successful and unsuccessful uses, and there is no telling whether a use-instance is successful or not until after it has taken place. However, nothing in this argument seems to prevent that individuals act, by and large, according to conventions that to a large extent are shared but to some extent involve individual discrepancies. Part of the force of KW’s argument is that the behaviour of individuals is not (completely) determined by these conventions.

In effect, this means that even if a certain use-instance is deemed indeterminate or inappropriate by a DP, the DP can still choose to accept it. This is what I refer to as meaning-accommodation. Likewise (but perhaps less interestingly), even if a use is deemed appropriate by the addressee, she can still choose to reject it (“mischievous rejection”).

We distinguish three main ways in which a use can relate to a convention. Firstly, the use can be *appropriate* according to the meaning-convention. This means that the convention admits of the use. Second, the use can be *inappropriate* given the convention, i.e. the convention forbids the use. Third, if the convention neither admits nor forbids the use, the use is *indeterminate* in relation to the set of conventions. This includes the case where a construct is unknown. For convenience, I will henceforth simplify matters by treating inappropriate and indeterminate uses as a single class.
Monotonous and nonmonotonous meaning-updates

If follows from (1) that whenever a construct c is used, S_c will be extended and so the meaning of c, f(S_c), may change. We refer to such changes as meaning-updates. A meaning-update is called monotonous (symbolically, +) if a use is consistent with previous uses, and non-monotonous (symbolically, *) if the use is not consistent with previous uses. For the moment, we will not attempt a definition of consistency. Suffice to say that it can be expected that non-monotonous meaning-updates have similarities to belief revision (Gärdenfors), whereas monotonous meaning-updates are more straightforward.

An overview of the correspondence between appropriate and non-appropriate (indeterminate/inappropriate) uses, successful and unsuccessful (failed) uses, monotonous and non-monotonous meaning-updates, and updates of positive and situational collocations is shown in the table below.

<table>
<thead>
<tr>
<th>Appropriate use</th>
<th>Succeeds</th>
<th>Monotonous update</th>
<th>Add to S_c^+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate use</td>
<td>Fails</td>
<td>Non-monotonous update</td>
<td>Add to S_c^-</td>
</tr>
<tr>
<td>Non-appropriate use</td>
<td>Succeeds</td>
<td>Non-monotonous update</td>
<td>Add to S_c^+</td>
</tr>
<tr>
<td>Non-appropriate use</td>
<td>Fails</td>
<td>Monotonous update</td>
<td>Add to S_c^-</td>
</tr>
</tbody>
</table>

The exact relation between meaning-updates and additions to situation-collocations remains to be further specified.

**Grounding and meaning-updates**

Now, consider a situation where construct c is used in situation s, and c is addressed to B by speaker A. Assuming B is familiar with c, A will have some idea of the meaning of c; i write this as f(ScA). The possible outcomes of this situation are shown in the table below. (Note that we here ignore cases of speaker-inappropriate uses, for ease of exposition.)

<table>
<thead>
<tr>
<th>Speaker-appropriate (conservative use)</th>
<th>Speaker-indeterminate (creative use)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hearer-appropriate</strong></td>
<td></td>
</tr>
<tr>
<td>Successful</td>
<td>Successful</td>
</tr>
<tr>
<td>Default Case</td>
<td>Unnoticed creativity</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td>Successful</td>
</tr>
<tr>
<td>? Mischiefful Rejection</td>
<td>? Mischiefful Rejection of Creative use</td>
</tr>
<tr>
<td><strong>Hearer-indeterminate/ inappropriate</strong></td>
<td></td>
</tr>
<tr>
<td>Successful</td>
<td>Successful</td>
</tr>
<tr>
<td>Accommodated Conservative Use</td>
<td>Accommodated Creative Use</td>
</tr>
<tr>
<td>Unsuccessful</td>
<td>Successful</td>
</tr>
<tr>
<td>Uncovered Discrepancy</td>
<td>Failed Creative Use</td>
</tr>
</tbody>
</table>

We will here focus on some of these cases, leaving others for future work.
**Default Case**

In this case, there is no reason that \( f(S_c) \) would change substantially either for S or H. However, each new instance conforming to previous uses the potential to reinforce the existing meaning further, if ever so slightly. (This is commonly referred to as ”reproduction” in poststructural accounts.)

*Example:*

A: It's raining  
B: indeed

The updates in this case are:

\[
[c]_A := [c]_A + s, \text{ add to } S_{cA}^+  \\
[c]_B := [c]_B + s, \text{ add to } S_{cB}^+
\]

**Uncovered Discrepancy**

This case reveals a discrepancy between speaker's and the addressee's views of \([c], f(S_{cA}), \text{ and } f(S_{cB}).\) This discrepancy may be discovered and a solution negotiated, leading to either shared acceptance or rejection (prompting at least one DP to alter her view of \([c]\)), or continued (but recognized) discrepancy.

Assume a situation where there's a barely noticeable drizzle; this is a case where previous uses of "It's raining" may not determine whether it is appropriate in this situation.

A: "It's raining"  
B: "No, it's just a drizzle."

Depending on the outcome of the negotiation, one, both or none of the DPs involved may non-monotonically update their subjective meaning of \(c\).

\[
[c]_A := [c]_A + s \text{ or } [c]_A := [c]_A * s  \\
[c]_B := [c]_B + s \text{ or } [c]_B := [c]_B * s
\]

If B’s rejection above is not challenged by A, A will make a non-monotonic revision of her subjective meaning of \(c\), whereas B’s meaning is monotonically updated.

\[
[c]_A := [c]_A * s, \text{ add to } S_{cA}  \\
[c]_B := [c]_B + s, \text{ add to } S_{cB}
\]

(It is important to note that we here make a simplifying assumption that there is no disagreement as to "what’s actually happening", e.g. the amount or denseness of the rain. However, insofar as meanings and beliefs affect our perceptions, the line is indeed difficult to draw.)

**Accommodated conservative use**

As noted above, the choice whether to accept or reject \(c\) is not completely determined by the appropriateness of \(c\). Thus, B may accept a use of \(c\) that violates B's own current subjective
meaning-function for \( c \). If this happens, it will become more likely that \( c \) will be accepted in similar situations in the future. (The exact notion of situation-similarity used will of course be a major issue in any attempt to make this theory more specific.)

*Example:*

Assume a situation where there's a barely noticeable drizzle; this is a case where previous uses of "It's raining" may not determine whether it is appropriate in this situation.

A: "It's raining"

B: (after some deliberation, decides to accept A’s statement even though it’s not exactly what he would call rain): "Yes"

The updates in this case are:

\[
[c]_A := [c]_A + s, \text{ add to } S_{cA}^+
\]
\[
[c]_B := [c]_B \cdot s, \text{ add to } S_{cB}
\]

**Redundancy, learning, change and adaptation**

How does one, while learning a new language, pick up a new word? Typically, the learning process begins when one first notices the word being used in some situation. In this case, the set \( S_c \) is created with a single member. The redundancy of language (and the possibility of interactive clarifications) ensures that each such situation can provide more insight into the meaning of the new word. Eventually, the learner tries using the new construct and monitors the reaction to decide whether this was a successful (appropriate) use. At this stage, of not sooner, the division into successful and unsuccessful uses is started. A similar situation arises when learning a new activity that requires linguistic interaction.

This paper has concentrated on how individual meaning-dispositions can change as a result of the grounding process in concrete conversational interaction. Hopefully, the theory sketched in this paper can be used to provide some account of everyday, activity-anchored language learning. In a sense, we never stop learning language; if we stopped, our language would soon become outdated and a social obstacle. By expanding on the relation between individual meaning-dispositions and social meaning-conventions, I hope to be able to provide the basis of an account of language change and the adaptation of language to new activities along similar lines.