

## H.P. Grice on location on Rossel Island

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I want to indulge in a thoroughly un-American activity: namely looking backwards. Perhaps on the Silver Jubilee of BLS, I may be forgiven. It is just over thirty years ago that Paul Grice delivered the William James Lectures, in which he outlined the theory of implicature, and then set up shop on this campus. It is almost 25 years since 'Logic and conversation' first appeared in print, and exactly 10 years ago that the book *Studies in the Way of Words* was published, where many of Grice's famous unpublications finally appeared.

On this anniversary, it seems appropriate to ask: How can the implicature ideas be applied in current language description and analysis? Gricean analyses are usually proposed for familiar languages for obvious reasons: subtle judgements of meaning are often involved. However, it may be possible to push beyond this if we concentrate on a certain genus of implicature, namely Generalized Conversational Implicature, and construe this in certain ways. In this paper I want first to sketch such a construal, and then to show that this may be a practical tool for understanding patterns in less familiar languages, which may also help us to capture patterns of preferred interpretation. For this purpose I will concentrate (for no special reason other than to justify the title) on spatial description in the language of Rossel Island, with comparisons to other languages we have been working on in a collaborative project at the Max Planck Institute for Psycholinguistics.

I suspect that there are some who think that Grice's theory of implicature is passé. Many cognitive linguists (e.g. Jackendoff 1983, Langacker 1987) deny that there is any place for a semantics/pragmatics distinction in their conception of the field (although in practice the distinction is recognized in other terms; see Wilkins & Hill 1995, Fauconnier & Sweetser 1996). Perhaps they have the following syllogism in mind: *Anything we mean, we think; Therefore, what we mean and what we think are the very same thing* - 'semantic structures' just are 'conceptual structures'. We don't need to be a psycholinguist to see that this is confused. There are a number of properties of language that ensure that what we *think* and what we *say* could never be exactly coincident (Levinson 1997):

- *There is more than one 'language of thought'*, and language is tied to a more propositional mode of representation: that's why you can accurately describe in one word your kin-relation to your Auntie, but in any number of words fail to describe her face.
- *Language is a linear medium*. There is no reason to think that, say, visual cognition is linear in the same way (e.g. the cognitive power of diagrams lies in their non-linearity).
- *Language is indexical*. But thought better not be indexical in the same way, or a mental resolution to do something tomorrow would ensure I never did it.

- *Language is general, thought specific.* Natural lexica have to be learnable, and so are small in size: this guarantees the semantic generality of expressions – they must cover a lot of different extensions.
- *Language is a public, broadcast medium.* So it employs special shortcuts, like ellipses and anaphora, but also builds in redundancies against “noise” (like agreement systems)
- *There is often an obvious gap between the ‘said’ and the ‘unsaid’.* That is the domain of pragmatics.

For the purposes of making vivid the distinction between what is coded and what is inferred, a visual analogy may be helpful. Consider a sketch like that in (1) below. We can effortlessly interpret this as a mother and child. But there is almost nothing there! How do we do it? Although we know much more about the processes underlying vision (thanks partly to animal models) than those underlying language, how we get from an image as “degraded” as this Matisse sketch to a determinate interpretation is pretty mysterious. Something like the following must be involved:

1. We imaginatively fill in missing lines, complete arcs, in order to obtain a “finished” 2D line drawing.
2. We extract 3D volumes from 2D representations.
3. We can do all this only because we can exploit the *presumption of semiosis* – that is, the presumption that the artist depicted *something* in such a way that he intended us to be able to recover it, following the cultural conventions of drawing in our society (and not e.g. those in Central Australia, where the view is always from above).

(1) Matisse Sketch



Now compare some minimal utterance like: “*It will be ready soon*”. In a similar way we have to complete the sketch (and the resolution can go in quite different directions, according to whether we are talking about the dinner or Joe’s dissertation):

1. We fill in the ellipses (*ready* for what?), we resolve the pronouns (*it* = dinner, or thesis), we limit the temporal spans (*will soon* = 5 minutes, or next year)

2. We extract full-blown interpretations (*ready* of dinner means cooked, *ready* of dissertations means written), utilizing all the conventions of language use, our knowledge of stereotypical scenarios or frames, and so on.
3. We can do all this because we can exploit the *presumption of semiosis* – knowing that the speaker said just enough for us to be able to recover what he or she intended, using the conventions of the language and its use.

On this view, language codes only highly schematic and incomplete meanings. The illusion of determinate messages is due to a huge body of inference triggered by those feeble cues that constitute linguistic meaning. In short, language is sketchy. Why should that be? One crucial motivation is that human language is encumbered with a striking bottleneck in speech production: The fastest sustainable speech rate for English is about 7 syllables per second, or 17.5 segments per second (Laver 1994), which equates to a very lowly 100 BAUD. (Bill Poser, p.c.). Pre-articulation processes in speech production can run *three to four* times faster than articulation (Wheeldon & Levelt 1995), and the same goes for comprehension (Mehler et al. 1993). This encoding bottleneck implies that linguistic coding is ‘expensive’ and inference is ‘cheap’, and the design requirements for human communication are: minimize linguistic coding and maximize inference.

What is required is some system of *ampliative inference*, a reasoning process that *adds* premises (not deduction or logical inference which merely cranks out what is already contained in an utterance - which, as we have seen, may anyway be propositionally incomplete and fragmentary). The process should increase what Bar-Hillel & Carnap called the *semantic informativeness* of the utterance, i.e. it should serve to further delimit the worlds compatible with what the utterance means – an assertion is informative to the extent that it tells us what is not the case.

The problem is: how to constrain such ampliative inference, so that what the recipient interprets corresponds well enough to what the speaker intends? The only way is for speaker and recipient to share simple but powerful heuristics, which will multiply the content of what is coded in a reliably recoverable way. Particularly desirable would be heuristics which would amplify the content of the message without requiring extensive background knowledge, because then an utterance could carry with itself, as it were, the keys to its own interpretation, its own unZip code.

Here are some candidates. First, consider a blocks world (à la Winograd 1972): a domain of discourse which consists of a few coloured blocks, say a red cube, a blue cylinder, a green cylinder, a small yellow cube, and a couple of other blocks. Now consider the utterance:

(2) “The blue cylinder is on the red cube”

The statement is compatible with many different possibilities in the blocks world, e.g. the blue cylinder and the yellow cube and the green cylinder are all on the red cube. But that is not how we interpret the utterance: we read it as a claim that *only* the blue cylinder is on the red cube. That is the effect of our first heuristic, which I shall call the **Q-heuristic** – loosely put it goes “*What is saliently not said is not*

*the case*". In the blocks world we know that red cylinders contrast with green ones, and other blocks of other color – they weren't mentioned, so they were not in play.

Now consider the same utterance from a different perspective. When we envisaged the blue cylinder on the red cube, we imagined it sitting canonically on the red cube, not teetering on the edge, nor with another block between it and the red cube. Nor do we expect the red cube itself to be perched precariously on another block. There would be nothing *false* about describing any of these situations using utterance (2) (e.g. we don't hesitate to say "Supper is on the table" just because there is a table-cloth between the supper and the table). But (2) is just not how we would describe those non-stereotypical situations. That's because we observe what we can call the **I-heuristic**, which, loosely put, goes "What is simply described is stereotypically exemplified".

Now if we *did* want to describe those non-canonical situations we might say, e.g.,

- (3) "The blue cylinder is *supported by* the red cube"  
or "The blue cylinder is *sort of on* the red cube"  
"The blue cylinder is *on top of* the red cube"

In doing so we would be following the **M-heuristic**, roughly "Marked message indicates marked situation".

Now these heuristics are just some of Grice's Maxims in disguise. But recasting them this way is not entirely gratuitous. What we are trying to capture is that just some of those Maxims are suitable for the job of producing *default inferences*. Default inferences are ones that go through *unless* blocked in some way. Grice called them *Generalized conversational implicatures*, or GCIs for short, and he was particularly interested in them because GCIs are – he thought – frequently confused with the meanings or semantical content of words and constructions, for the simple reason that they normally, unless cancelled in some way, accompany those expressions. They thus do not depend on special properties of the context, like implicatures due to the maxim of relevance, or figures of speech like irony. Now the heuristics that I have just outlined have the requisite property of inducing *default inferences*, because they are based solely on properties of the form and content of the utterance, not on extra propositions about the context. The Q-heuristic requires a metalinguistic notion of salient alternates, an attention to what else might have been said but wasn't. The I-heuristic licenses maximal interpretations to the stereotype on the basis of unmarked message type. The M-heuristic plays off the I-heuristic: whatever might have been implicated by a simple unmarked utterance, is ruled out by the use of a marked message form.

Because these heuristics are just some of the old familiar Maxims in disguise, we do not need to spell out all the details of all the inferences that can be obtained under each one here (see the outline in Levinson 1995, and the monographic treatment in Levinson 1999). But here are some reminders, with some applications to spatial prepositions sketched:

**The Q-Principle** (from Grice's First Maxim of Quantity, "Make your contribution as informative as is required").

*Heuristic*: ‘What is saliently not said, is not the case.’

For a set of alternates in the same semantic field which are logically compatible, use of the one implicates that another doesn’t apply (e.g. asserting “The ball is red” implicates ‘not yellow, blue, etc. as well’). More specifically, given a Horn-scale  $\langle S, W \rangle$  where  $S$  is informationally stronger than  $W$  (so  $A(S)$  entails  $A(W)$  in a suitable sentence-frame  $A$ ), using  $W$  implicates that the stronger  $S$  does not apply. For example,  $\langle All, some \rangle$  form such a scale, so that asserting “Some of Grice’s pirots are still alive”  $\rightarrow$  (implicates) ‘not all of them are’, and similarly for all the quantifiers and modals (see Horn 1989, Levinson 1999). Closed-class alternates frequently exhibit this kind of privative opposition (cf. e.g. Hawkins 1991 on determiners), as do contrasts in the lexicon (cf. e.g. Wilkins & Hill on motion verbs). Consider for example the English spatial prepositions: arguably, for instance,  $\langle at, near \rangle$  form a scale, so “the train is near the station” only implicates ‘not at the station’.

**The I-Principle** (for ‘Informativeness-Principle’ (Atlas & Levinson 1981), from Grice’s second Maxim of Quantity, “Do not make your contribution *more informative* than is required”).

*Heuristic*: ‘Unmarked, minimal expressions warrant maximal interpretations to the stereotypical extensions.’

Under this heuristic fall the many systematic patterns whereby simple expressions get maximal interpretations. Consider e.g. *conjunction-buttrressing* in which conjoined events get read (under appropriate tense/aspect constraints) as causal statements (“She pushed the button and the engine started”  $\rightarrow$  ‘she caused the engine to start’), or the rich interpretations of possessives or novel compounds (Levinson 1999), or the many kinds of *negative-strengthening* (Horn 1989). Again, we can find examples in the domain of spatial prepositions: for example *in* is interpreted in accord with the most salient stereotypes, thus asserting “The coffee is in the cup”  $\rightarrow$  ‘the liquid, rather than the beans, is wholly within the cup’, while “The pencil is in the cup”  $\rightarrow$  ‘partially in, but projecting out of the cup’, and so on.

**The M-Principle** (from Grice’s first and fourth Maxims of Manner, “Avoid obscurity, avoid prolixity”).

*Heuristic*: Marked message indicates marked situation; specifically, if unmarked utterance  $U$  I-implicates  $p$ , then marked utterance  $M$  M-implicates the complement of  $p$  (Horn’s 1984 ‘division of pragmatic labor’).

The effect of the M-heuristic is, then, to give us mirror-image inferences: whatever one would have inferred by the I-principle from a simple, direct expression, is ruled out by the use of a marked, prolix or unusual expression. Consider, for example, the periphrastic modals: whereas saying “John could solve the problem” I-implicates ‘he did’, saying the more marked “John had the ability to solve the problem” M-implicates ‘he didn’t’. Similarly, the use of double negatives to indicate a positive suggests that the implicatures of the simple positive are being avoided. Thus whereas “It’s possible the Republicans will win the next election” I-implicates ‘likely to probability  $n$ ’ (where  $n$  is given by stereotypical expectations), “It’s not impossible that the Republicans will win the next election”, M-implicates that the probability is significantly less than  $n$ . There are many other applications to marked lexical alternates, marked derivational forms, etc. (see Horn 1984, Levinson 1999). Again, examples can be found in the English spatial prepositions, where e.g. *on* contrasts with *on top of*, so that “The

lamp is on top of the desk” M-implicates either an unusual viewing angle (we are under the desk) or a deviation from the direct-contact that would have been suggested by *on*.

We have now outlined three Gricean heuristics. They induce *presumptive meanings*, that is default inferences that are generated *without elaborate reasoning about the speaker’s intentions*. GCIs gain this presumptive quality, this generality across contexts, because they are based on general heuristics operating only on the form and content of what has been said. Utterances carry with them the systematic cues to their own unpacking, thus overcoming the encoding bottleneck by letting metalinguistic considerations about choices in message construction amplify the message. More simply put, the three heuristics suggest an *iconic basis* for message amplification. This idea is entirely in line with Grice’s central idea about communication, namely that “every artificial or non-iconic system is founded upon an antecedent iconic system” of representation and communication (Grice 1989:358).

## 2.0 Yélf Dnye, the language of Rossel Island

Let us now turn to consider how such an analysis of presumptive meanings might be of practical application in linguistic analysis. For that purpose I propose to transport Grice to a pacific island, in line with his philosophical hedonism (as explained in the Grady & Warner (1986) *Festschrift*). Let us look at a few aspects of spatial description in Yélf Dnye, the language-isolate spoken on Rossel island, Papua New Guinea (see Henderson 1995, whose practical orthography is used here). In so doing I will try and draw out some generalizations that seem to be applicable to other languages under study at the Max Planck Institute for Psycholinguistics.

For comparative purposes, we employ a number of stimulus materials. One of them is a picture book (designed by Melissa Bowerman and Eric Pederson) with 71 pictures of objects in a ‘topological’ relation to one another, i.e. relations describable in English with prepositions like *in, on, at, near*. We ask, e.g. “where is the cup?”, and get the answer “The cup is on the table”, the latter exemplifying what we will call the **Basic Locative Construction** for English. When we do this for the 71 pictures, for English we get about fifteen prepositions (about a third of which are compound, like *on top of*) and one verb, for Dutch we get about 20 prepositions (about a third compound) and four verbs, and for Rossel language we get about 25 simplex postpositions and three verbs. For Tzeltal we get one preposition and up to forty verbs. Clearly, these are fine classifications of locative situations, but they may be done either in the adpositions, or in the locative verbs or in both (not to mention other spatial nominals).

The ‘basic locative construction’ for Rossel is exemplified in (4):

- (4) *Figure Ground*                      *Postposition*                      *Positional verb*  
           ↓                                      ↓                                      ↓  
           *kemi kígha kapí*                      *k:oo ka*                                      *tóó*  
           mango fruit cup                      in                      deictic+TAMP sits  
           ‘The ripe mango is in the cup’ (or ‘There is a mango in the cup’)

This construction has two important components: the postposition which builds the postpositional phrase specifying the Ground (where the object is located), and the positional verb which is largely determined by the Figure (the thing to be located). We take these up in turn.

### Rosselian postpositions

We have already seen how the oppositions between the English spatial prepositions may be susceptible to a Gricean analysis: thus <*at, near*> may form a Horn-scale, with the corresponding Q-implicatures, while *in* and *on* engender I-implicatures to the stereotype, which can in turn be avoided by the use of more prolix forms, so that e.g. “The cup is *on top of* the table” M-implicates some deviation from the stereotypical disposition, or from the canonical viewing situation (e.g. we are under the table).

Let’s now look at the Rossel postpositions, which in our sample seem to make a record number of distinctions. Is it possible, without good intuitions about the language to formulate hypotheses about likely implicatural relations between the postpositions? Using our picture book, we got four consultants to describe each situation or its nearest Rosselian analogue, and as mentioned we obtained 25 distinct postpositions. Let us look at those which seem to indicate that the figure is attached to the ground, i.e. they were used to describe what we may call attachment scenes. These are scenes that in English would mostly involve the preposition *on*, as in painting on wall, ring on finger, handle on door, bandaid on leg, papers on spike, etc. Many kinds of attachment scenes will in fact be described in other terms: e.g. leaves on a branch, or fruit on a tree invoke a postposition *nkwodo* which emphasizes ‘distribution of multiple Figures all over Ground’. Factoring these sorts of cases out, we have the following central attachment postpositions:

<b>Postposition</b>	<b>Gloss</b>	<b>Hypothesized Semantic Conditions</b>
<i>paa</i>	‘on a vertical surface’	Figure is attached to (near) vertical surface
<i>‘nedê</i>	‘stuck on hook/spike’	Figure is attached by projecting, piercing part of Ground (hook, spike, etc.)
<i>p:uu</i>	‘stuck on’	Figure is attached strongly to ground, regardless of type of fixing

The glosses have been derived by inspection of the dozen or more scenes described with each postposition. Inspection also shows that *‘nedê* (used for 10 pictures) and *p:uu* (used for 29) have overlapping extensions: 7 pictures had alternate descriptions with one or the other postposition. This suggests that *‘nedê* and *p:uu* might be in privative opposition, forming a Horn-scale <*‘nedê, p:uu*>, such that *‘nedê* basically means the same as *p:uu* but with the additional specification of attachment by piercing/hooksing, schematically:

< <i>‘nedê,</i>	<i>p:uu</i> >
<i>Strong</i>	<i>Weak</i>
‘attached by	‘attached somehow’
hook or spike’	

If so, every *‘nedê-situation* is also in principle a *p:uu-situation*, although by our Q-heuristic speakers should use the more informative *‘nedê* if they can.

Consider now the behavioral predictions such an analysis might make. Suppose we have three scenes and three consultants, and two forms *S* and *W* which are hypothesized to form a Horn-scale <*S*, *W*>. Here is the behavioral distribution of responses predicted by the Gricean heuristic of using the strongest applicable form:

Scenes		Consultants			Non-occurring patterns
		1	2	3	
<b>S-applicable Scene:</b>	1 <sup>st</sup> choice	<i>S</i>	<i>S</i>	<i>S</i>	<i>W</i>
	2 <sup>nd</sup> choice	<i>W</i>	<i>W</i>	<i>W</i>	<i>S</i>
<b>Marginal S-scene:</b>	1 <sup>st</sup> choice	<i>S</i>	<i>W</i>	<i>W</i>	<i>W</i>
	2 <sup>nd</sup> choice	<i>W</i>	—	—	<i>S</i>
<b>W-only Scene:</b>	1 <sup>st</sup> choice	<i>W</i>	<i>W</i>	<i>W</i>	<i>S</i>
	2 <sup>nd</sup> choice	—	—	—	<i>S</i>

In short, the predictions are that:

(i) For every *S*-applicable scene, consultants if pressed *may* agree that such scenes *could* be described with *W*, since there is only a pragmatic constraint behind the resistance to the use of *W*. And we don't expect them to offer us a *W*-description as first choice, then an *S*-description as a second best.

(ii) For every marginal *S*-applicable scene, we expect some consultants to choose *S* and some *W* as the best description, *but if they choose S, they should freely consider W an alternate.*

(iii) For every *W*-applicable scene for which *S* seems inappropriate, we do not expect a similar willingness to back off to an *S*-description, because this is a firm semantic constraint.

Now consider the distribution of responses for our 4 consultants over a representative sample of '*nedê* and *p:uu* scenes:

Picture No.	Scene	' <i>nedê</i>	<i>p:uu</i>
22	papers on spike	4	0
70	apple on skewer	4	0
9	coat on hook	3	1
<b>37</b>	<b>clothes pegged on line</b>	<b>2</b>	<b>2</b>
57	pendant on chain	1	3
12	mud on knife	0	4
35	bandaid on leg	0	4

It is evident that all four consultants use '*nedê* for clear spiking-scenes (pictures 22, 70), and all four use *p:uu* for scenes involving adhesion (12, 35). Most consultants treat hooking as a '*nedê* case (picture 9), most treat a chain-link attachment (picture 57) as a *p:uu* case. Right in the middle is an equivocal scene, in which clothes are held on a line by grip-action pegs: here the consultants divide. Let's look in detail at their responses for this marginal scene:



*Clothes on Line Scene (Picture 57):*

<b>Consultants:</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
First choice:	'nedê	'nede	p:uu	p:uu
Second choice:	p:uu	p:uu		

Clearly, the behavior is in line with the Horn-scale prediction: in the marginal case, anyone who volunteers 'nedê as best description will readily accept p:uu, but not vice-versa. Thus we have some initial evidence in favour of the Horn-scale analysis.

Exactly similar analyses are possible for other pairs of Rossel adpositions, for example different IN postpositions, where one (*u mênê*) requires full inclusion under convex closure of the ground, and the other (*k:oo*) allows partial inclusion. Again the behavioral distribution of response types fits a scalar analysis. So what? The general point is that many expressions that functionally contrast may in fact be in pragmatic rather than semantic opposition. Further, careful examination of preferred usages can reveal likely pragmatic factors even in a language under field investigation.

Now, for some of these attachment scenes, a different construction is also available. The construction is just the same, with a positional verb, except that the postposition is dropped altogether. This zero-postposition construction has a limited but systematic distribution in the description of our picture-book scenes: for example, instead of *p:uu* 'general attachment', the zero-postposition is used for part-whole relations (e.g. strap on bag), traditional adornments (e.g. armbands), objects in characteristic use (e.g. cork in bottle). The generalization is that the zero-postposition construction cannot be used for unexpected, non-stereotypical relations. Characteristic motion and dispositions (whether ships on the sea, or fruit on a branch) invite the dropping of the postposition. Non-traditional adornments (rings, hats) require post-positions, traditional adornments (arm-bands, belts) do not. All this is in line with cross-linguistic tendencies. Many languages with systematic case-marking may oppose a general Locative Case to a series of adpositions. Thus in Tamil one can use the Locative Case for nearly any stereotypical extension, without specifying IN/ON or other relations in the rich postpositional system; to use those postpositions then implicates some kind of special situation. Similarly, many languages (like Guugu Yimithirr) drop the locative verb in these kinds of situations, where Rossel drops the postposition. What these reduced constructions signal is: business as usual. They are constructions inducing I-inferences to the stereotype, and they can contrast minimally with the postpositional construction, which can then suggest an unusual, non-stereotypical extension by M-implicature. This explains why our Rossel informants are happy to use the zero-postpositional construction with traditional bodily adornments, like armbands, but resistant to using it with Western adornments like watches, rings or metal necklaces.

There are a number of competing ON-postpositions about which similar remarks can be made. Take the following contrasting sentences describing a headband around a man's head:

(5) Picture 46: Head band

(a) *kpídí pee pi kēpa mbêmê ka t:a*  
 cloth piece person forehead on TAMP hanging

‘The piece of cloth is hanging on the person’s forehead’

(b) *kpídí pee pi kēpa ka t:a*  
 cloth piece person forehead (Postposition slot) TAMP hanging

‘The piece of cloth is hanging (around) the person’s forehead’

(c) *kpídí pee mbêmê ka t:a*  
 cloth piece (Ground slot) on TAMP hanging

‘The piece of cloth is hanging on’

(d) *kpídí pee pi kēpa mbêmê ka tóó*  
 cloth piece person forehead on TAMP sitting

‘The piece of cloth is sitting on the person’s forehead’

The sentence (b) was the preferred form: it says just what needs to be said for an accurate description, and thus I-implicates stereotypical extensions. The first sentence (a) is prolix compared to (b): the postposition *mbêmê* therefore M-implicates that the head-band isn’t around the hat-line, but is perched on top of the head. That implicature is avoided by an alternative reduction as in (c), where the Ground object (the head) is omitted but the ON postposition maintained, as in English *He’s got a hat on*. Finally, one can switch the positional verb to another of the alternates as in (d): once again, the message now is “non-stereotypical extensions”, specifically here what is suggested is that the head-band is not firmly tied on. This brings us to the next subject: locative verbs, but first let us sum up.

We have now illustrated how the three kinds of implicature, Q-, I- and M-, may serve to further structure this closed-class set of postpositions: many Saussurean contrasts are not there in the semantics at all (e.g. the extensions of one term include those of another), but rather emerge by the operations of Q-implicature or M-implicature. We have also shown how hypotheses about implicatural relations can be derived by inspection of elicitation materials in a field language, allowing them to be checked in further elicitation.

### Positional Verbs

In answer to Where-questions, a language with a single locative verb like English poses no problems of choice. But a language (like Dutch or Arrernte or Rossel) with three or more contrasting positional verbs forces a choice on complex semantic grounds. These verbs are often drawn from those used for human posture, like ‘sit’, ‘stand’, ‘lie’, but they often include a less anthropomorphic prototype, ‘hang’. Dutch has all four, Arrernte ‘sit’, ‘stand’, ‘lie’, and Rossel has ‘sit’, ‘stand’, ‘hang’. As far as I know, there is no full-scale study of the cross-linguistic patterns (although see Clark 1978, Hengeveld 1992:238-9): Stassen (1997:61) states that the “vast majority” of the 410 languages in his sample encode dispositional notions in their locatives, and suggests that this is the reason that locatives are more likely to involve a verb than, say, equational sentences. David Wilkins (in unpublished work) suggests that languages fall into three main classes: those with a single locative verb (e.g. English, Oluta, Turkish), those which utilize a large number of predicates (e.g. Tzeltal, Likpe), and those with a small contrastive set of positional verbs (e.g. Dutch, Guugu Yimithirr, Rossel).

The positional verb paradigm in Rossel is as follows (Henderson 1995:32, where ‘proximal’ indicates the three of the six tenses nearest to coding time):

		‘sit’	‘stand’	‘lie’
<i>Indicative, Proximal</i>	Sing/Dual	<i>tóó</i>	<i>kwo</i>	<i>t:a</i>
	Plural	<i>pyede</i>	<i>wee</i>	<i>t:a</i>
<i>Non-Indicative, non-Proximal</i>	Sing/Dual/ Pl	<i>ya</i>	<i>kwo</i>	<i>t:a</i>

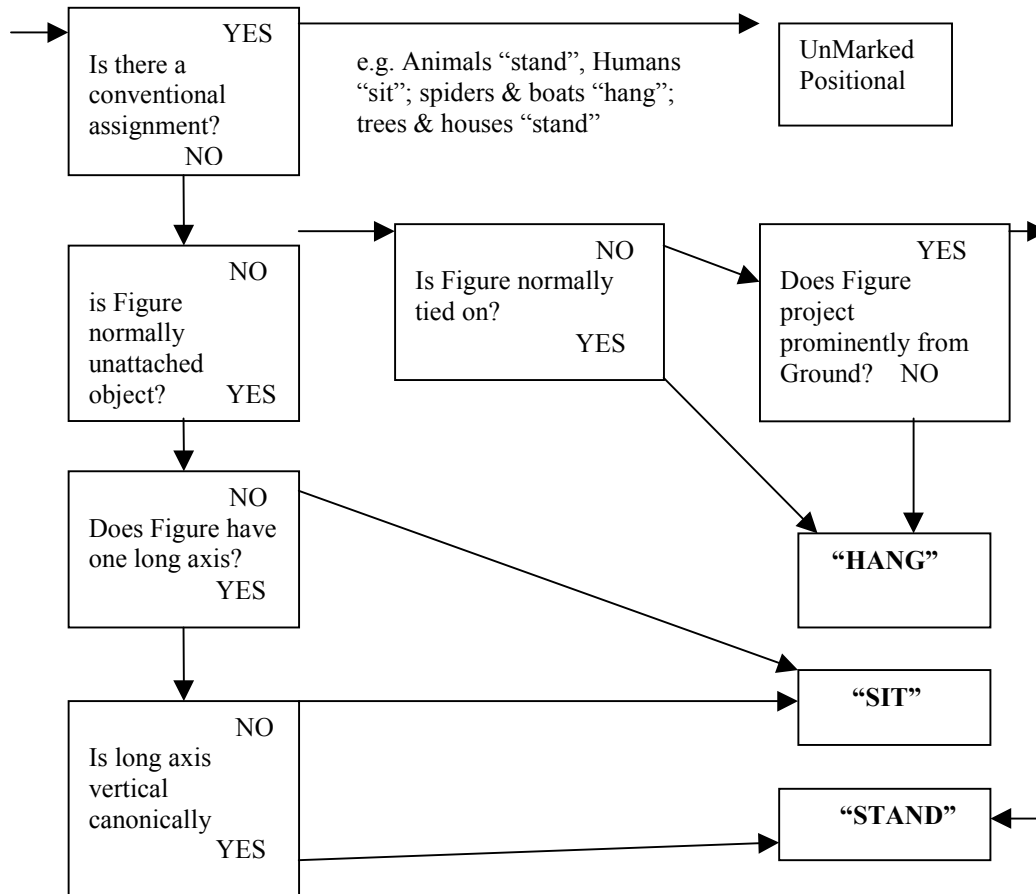
These verbs, with suppletion on these particular dimensions, seem to constitute a minor form class (there is one other candidate, *mii* ‘move’, which can be used for locatives statements about animates moving in their prototypical medium). We will call these **positional verbs** because canonical position and disposition of the Figure constitute, in the prototypical case, the basis of the semantic distinctions. Let us be clear that languages with a small set of locative verbs like this are fundamentally different from English in that: (a) Whereas in languages like English the general copula or BE verb is the unmarked option in answer to a Where-question, there is no such general option in a positional verb language; (b) in a language like Dutch or Rossel, when you say “The cup stands on the table” you are not asserting the standing, you are asserting the location, and presuming that cups are said to ‘stand’ – your statement will not necessarily be false if the cup is on its side. Positional-verbs have a sortal nature: they classify the nominal concepts according to canonical position.

In Rossel the ‘basic locative construction’ is essentially identical to the existential construction. The alleged differences between existential and locative constructions can easily be eroded (e.g. existentials can be definite as in *There is only the one God*, and localised as *There is no food in the house*), so it is not surprising that perhaps a quarter of all languages make no systematic distinction (E. Clark 1978:94-6). A language with positional locatives already has to have a default assignment of positional to nominal (otherwise one couldn’t say “The bottles are on the table” without knowing if they were standing or lying), but this becomes especially clear in a language like Rossel that collapses locatives and existentials. In such a language we can use negative existential statements to test for these defaults (the negative makes clear we can have no particular exemplars in mind – only collocational constraints can be at work). Applying this negative existential test for default assignments, we find that in Rossel, we must say in effect “There is no shell money *sitting* here”, “There are no islands *standing* there”, “There are no canoes *hanging* there”, etc., as detailed in Appendix 1. Abstract nouns follow similar conventions: knowledge sits, but memory stands, and hunger hangs. For physical objects there is some semantic motivation for the choices here, in line with shape and orientation principles described below. In addition, a bit of cultural knowledge will help to explain why people sit, but animals stand, why fornication sits but sorcery hangs, and yams sit in the ground but taros stand. But there is also almost certainly an element of arbitrary convention, as in gender and agreement systems, explaining why tides sit, but currents hang, and so on.

But what about novel objects? Consultants can agree about how they should be described. So there must be an underlying system of semantical specification, which accounts not only for confident assignment of novel objects, but also for

the (partial) semantic motivation behind the now conventional assignments to physical objects. Here is my guess at the underlying algorithm:

### Partial algorithm for Positional Verb choice



This is the semantic background. A given nominal concept or Figure has a default collocation with a specific positional verb, given either by convention or the rules above applied to novel objects. We now turn to the pragmatics. Use of the *unmarked* semantic assignment **I-implicates** that all the stereotypical expectations obtain: e.g. ‘The fish are standing in the pool’ implicates they are swimming around as fish usually do, but ‘the taro are standing in the garden’ implicates that they are growing in the soil. A switch **M-implicates** a complementary interpretation: e.g. ‘The taro are sitting in the garden’ implicates that they are harvested. Although in principle the range of interpretations is wide, marked choices are typically interpreted in the following directions:

- the focus is on actual position (rather than canonical/conventional position), e.g. dogs “stand” by convention, so “sit” implicates lying down, e.g. sleeping.
- some specific condition for the unmarked assignment is not met: e.g. if ‘hang’ indicates ‘tied-on’, ‘sit’ M-Implicates ‘not properly tied on’

- signal ‘general state’ via switch to ‘hang’ (via associations with attachment), or ‘specific state (right here, now)’ by switch to ‘stand’.

Here are some examples:

(6) *koome table u mēknawo a*      **kwo**      **tóó**  
 cat    table POSS under      TAMP      **stand**      **sit**  
 ‘The cat is under the table’      M+> “Actual position”

(7) *te glass u mēnē a*      **kwo**      **tóó**  
 fish    bowl POSS inside      TAMP      **stand**      **sit**  
 ‘The fish is on the bowl’      M+> “Dead”

(8) *kpídí pee pi kēpa mbēmē ka*      **t:a**      **tóó**  
 cloth piece person forehead on      TAMP      **hang**      **sit**  
 ‘The piece of cloth is around the person’s forehead’      M+> “Falling off”

To summarize: the basic locative construction in Rossel illustrates a number of general patterns of cross-linguistic validity. First, adpositions are often not strictly in semantic contrast, the Saussurean oppositions often partly arising from pragmatic factors (Q- and M-implicatures). Secondly, languages with small sets of positional verbs typically have the following characteristics: positionals sortally classify nominal concepts according to conventional collocations and (for physical objects) shape/position information; these unmarked usages I-implicate stereotypical extensions; deviations from this unmarked usage can signal various things by M-implicature. Systematic application of the I-principle can lead to reduced structures (omissions of adposition or, in some languages, positional), whereupon fuller structures can M-implicate deviations from expected stereotypes. From this last fact, the paradox follows that the ‘basic locative construction’ can in some instances fail to be the most colloquial, least-marked form of answer to Where-questions. Gricean analyses can help us in practical linguistic description, and aid the formulation of typological generalizations.

## Conclusion

We have just seen Grice on location on Rossel Island, indulging in some of the “linguistic botanizing” which he regarded as “essential” (Grice 1986:57). Grice had learnt that trick from Austin, but unlike Austin he was after a general theory about the relation of meaning to use:

“In my own case, a further impetus towards a demand for the provision of a visible theory underlying ordinary discourse came from my work on the idea of Conversational Implicature, which emphasized **the radical importance of distinguishing ... what our words say or imply from what we in uttering them imply**: a distinction seemingly denied by Wittgenstein, and all too frequently ignored by Austin” (ibid., 59, bold added).

It is a distinction, unfortunately, that we need to be constantly reminded of. And even if our ambitions are just linguistic description, good linguistic botany requires that one makes the distinction between what is coded vs. what is not coded but presumptively inferred, that is between the two great lifeforms in the theory of meaning: semantics and pragmatics.

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**Appendix 1: Some default assignments of different Figures to positional predicates under negative existentials**

SIT	STAND	HANG
shell money darkness, light tides rain, calm-weather, mist	trees, palms, houses, mountains, islands,  (calm?)	canoes, boats, roads, clouds,  currents, winds, rivers persistent rain
moon, sun	stars	red-sky (dawn)
people, friends, relatives, descendants, wife, etc.  snakes	chickens, dogs, birds (in tree), pigs, fish, weevils (inside fruit) crocs (in river)	  crocs (on bank)
water juice	fire, steam	smoke
yams (in ground) fat	taro & tapioca (in ground)	
coconuts, betelnuts, fruits on ground	pineapples, fruits on trees	mangoes, nuts in trees
meetings, feasts	beginning of meeting, feast	
knowledge sleep story, news discipline, work happiness fornication debt, peace medicine, mortuary payment	memory   threat debt	taste, hunger, thirst  signs, tracks  flagrant fornication  sorcery/power
clothes firewood	smells, light	smoke (also 'stand')
skin disease	cancer	disease/epidemic
books	cups, candles	holes (negative spaces)
	eyes, teeth, hair, grey-hair	

**Some possible underlying cultural logic?**

In addition to the canonical position of physical objects, there seem to be other factors:

- prestige animates 'sit' – people, yams, snakes (sacred), coconuts, betelnuts
- all non-prestige animals 'stand' – even fish
- strip-like entities 'hang' – hence rivers, paths, tracks of walkers, canoes
- 'hanging' has associations with general condition – hence sorcery and epidemics both 'hang', 'stand' has associations with temporary condition – hence debts, smells, etc. 'stand'.