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The On-going Development of the NSM Research Program

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The NSM model of universal grammar is still evolving. The goal of this closing chapter is to give a sense of the character of ongoing research work in the NSM program, especially the interplay between theory and practice; see also Wierzbicka (1996a:31-34) and Goddard (1999).

5.0 On-going work on semantic primes

Since the work reported in this volume commenced in 1994, there have been several advances in our understanding of particular semantic primes. For example, research by Robert Bugenhagen and by Nick Enfield on Mangaaba-Mbula and Lao, respectively, has led to a reconsideration of the nature of the prime MOVE (see this volume, sections 1.4.2 and 3.4.3). Bugenhagen's work has forced a rethink of the nature of the prime SIDE (see this volume, section 1.13.3). In this section I offer some snapshots of work in progress on innovations to the prime inventory.

The short history of MOMENT

The proposal that MOMENT is a semantic prime had its genesis in research done for this volume (cf. Enfield, this volume, section 3.11.4). While researching the syntax of temporal primes in Lao, Nick Enfield noticed that there was a marked asymmetry between A LONG TIME and A SHORT TIME: while A LONG TIME combined readily with VERY, the same was not possible with A SHORT TIME. A similar phenomenon had been noticed before in other languages, e.g. Cantonese (Tong *et al.* 1997:252-253), Malay (cf. Goddard, vol. I, section 3.11.4), and

Mangaaba-Mbula (this volume, section 1.12.3), but Enfield took the issue a step further: If one can't say 'a very short time' in Lao, how **does** one express comparable meanings? If one can't say that something happens 'in a very short time', how can one explicate meanings such as 'suddenly', 'immediately', 'blink' or 'snap'? Enfield noticed that the Lao expression which cries out to be used in contexts like these – *bùt*^{2}*.nùng*^{1} – is akin to 'moment' in English, i.e. it designates a minimal focused "point in time". Could 'moment' be a semantic prime, Enfield asked, and if not, how can it be explicated? The "tight focus" of the concept of 'moment' made it difficult to see how it could be satisfactorily explicated within the system as it was, because the only way of specifying a temporal anchor, as it were, was the combination AT THIS TIME, and the expression TIME is elastic in a way that 'moment' is not: TIME can be used to refer to periods of greatly variable length, whereas 'moment' cannot. Put another way, a 'time' can be thought of as having duration, but a 'moment' cannot be thought of in this way.[1]

To help clarify the profile of this new candidate for prime status, in unpublished work Wierzbicka adduced some passages from simple biblical narratives. In examples (1) and (2), the Greek words translated as 'suddenly' and 'behold' refer to a single "point in time", which is being focused upon within a background time frame. Example (3) shows "immediate sucession", i.e. the idea that something happens immediately after some other event.

(1) So Jesus arose and followed him, and so did his disciples. And *suddenly*, a woman who had a flow of blood for twelve years came from behind and touched the hem of his garment. (Matt. 9:19-20)

(2) As they went out, *behold* they brought to him a man, mute and demon-possessed. (Matt. 8:32)

(3) So he took hold of her hand and spoke to her, "Get up, child". Her breath returned, and *instantly* she stood up. (Luke 8:54 - 55, AB)

As Wierzbicka observed, whether the reference is made by means of a particle or adverb, such as Greek *idoú* or *parachrēma*, or by means of a prepositional phrase such as English *at that moment*, "it is difficult to see how the meaning intended could be rendered without some reference to what can be called a 'particular moment'."

Once MOMENT came under consideration as a possible prime, researchers began to notice that having this element available for explications would be highly facilitative in certain areas. For example, in many languages there are illocutionary particles which show a speaker's "immediate reaction" to

something that has just happened. The aspectological categories "punctual" and "achievement" also seem to be directly linked to the hypothetical prime MOMENT.[2] Wierzbicka showed in detail (this volume, section 2.8) that MOMENT is needed to describe the semantics of Polish aspect. Goddard (2001a) employed it in his study of the Malay verbal prefix *ter-*, which expresses a range of "sudden" and "spontaneous" mental events.

In short, it quickly became apparent that MOMENT is an extremely useful, and perhaps indispensable, item across a range of lexical, illocutionary and grammatical domains. Coupled with the fact that it "fills a gap" in the combinatorial syntax (i.e. the non-availability of 'a very short time') and its apparent resistance to explication, MOMENT becomes a strong candidate as a semantic prime. Much remains to be done, of course, before this proposed new prime can be regarded as well understood, especially in regards to its syntax.

The fall of the counterfactual

In earlier work Wierzbicka (1996a:101-103, 1997) had proposed that the meaning expressed by the counterfactual construction, i.e. the construction realised in English as 'if..., would' combined with a pluperfect, as in (4) below, was a semantic prime.[3]

(4) If X had not happened, Y would not have happened.
If they hadn't found that water, they would have died.
If Mary hadn't gone to the party, she wouldn't have met John.

As mentioned earlier, this claim has now been abandoned and it may be instructive here to explore why.

The reason for thinking that the counterfactual could be a primitive meaning was simply that at that time there was no plausible avenue by which it could be explicated. In particular, it was believed that it could not be explicated in terms of the plain conditional IF.

> [H]owever close the intuitive link between the two constructions is, and however similar their logical properties might be... what matters from a semantic point of view is whether or not one of the two constructions can be defined in terms of the other; and so far, all the attempts to come up with a reductive definition (including my own) have failed. (Wierzbicka 1997:27)

Several putative definitions were explored and rejected by Wierzbicka (1997). For example, the problem with the explication below is that: "it leaves out, so to speak, the element of imagination, which is the essence of the 'counterfactual' meaning" (p.32).

(5) If X had not happened, Y would not have happened =

I know: X happened
I know: Y happened
I think: before now, one could say:
if X doesn't happen Y will not happen

Soon, however, the proposal that the counterfactual was a semantic prime was thrown into doubt by cross-linguistic studies, first by Rie Hasada (1997) and later in unpublished writings by Malindy Tong and Cliff Goddard on Cantonese. In both languages, the plain conditional IF (particle *moshi* + *-ba* in Japanese, *jyu*^{4}*gwo*^{2} in Cantonese) is commonly used in counterfactual contexts, but in itself this does not mean that they lack counterfactual marking altogether.

Hasada (1997) showed, however, that though Japanese does have a construction which involves a counterfactual meaning (namely, a conditional with particle (*no)ni*), this construction is semantically specialised – conveying an adversative implication as well as the counterfactual statement. As Mizutani and Mizutani (1980:92) put it, sentences with *(no)ni* always imply a negative feeling such as "regret, surprise, criticism or reprimand". For example, *(no)ni* cannot be used in a situation like (6a), where the speaker feels good about what happened, but if the context makes it clear that the speaker feels bad about what happened, as in (6b), then *(no)ni* can be used.

(6) (a) *Mizu o mitsuke-te yokat-ta. *Mizu o mitsuke nakere-ba,*
water OBJ find-LINK good-PAST water OBJ find not-CP
karera wa shinda noni/daroo-ni.
they TOP die CONTRA/would-CONTRA
'It was good that (they) found water. If (they) hadn't found that water (they) would have died.'

(b) *Mizu o mitsuke-ta no wa yoku-nakat-ta. Mizu o*
water OBJ find-PAST GEN TOP good-not-PAST water OBJ
mitsuke nakere-ba, karera wa shinda noni/daroo-ni.
find not-CP they TOP die CONTRA/would-CONTRA
Ima demo iki-te-iru. Ano toki shinde hoshikat-ta.
now even live-LINK-PROG that time die want-PAST
'It was not good that they found the water. If (they) hadn't found that water, they would have died. They are still alive. I wanted them to die.'

As for certain other constructions possible in counterfactual contexts, such as conditionals with particles *ke(re)do(mo)* 'but' or *ga* 'but', Hasada (1997) showed that these do not actually encode a counterfactual meaning, since, if context permits, they are open not only to a strict counterfactual interpretation but also to an "indeterminacy" reading, when one is not sure if the supposed event is contrary to fact or not.[4]

Cantonese is another language which has some specialised counterfactuals, but no single construction as general as the English counterfactual (Malindy Tong p.c.; cf. Matthews and Yip (1994:301-306)).[5] For example, there is a locution (*zou*^{2} *zi*^{1} 'early know') which roughly corresponds to 'had I known', but it is only good for expressing this particular meaning, i.e. about KNOW. Another locution (*jyu*^{4}*gwo*^{2} *bei*^{2} *ngo*^{5} 'if give me', or even more colloquially *bei*^{2} *ngo*^{5} *zau*^{5} 'give me then') is roughly equivalent to 'if I were in X's place', e.g. 'if I were the boss'. A third expression (*gaa*^{2}*-jyu*^{4} 'suppose, lit. false-if') is suitable for introducing highly imaginative or hypothetical protases, e.g. 'if I were a cloud', but not for ordinary, prosaic counterfactuals.

In response to these problems, efforts to explicate the English counterfactual were redoubled. For a time the following explication (and variations on it) was under consideration. The idea was to take the label 'counterfactual' literally, i.e. to interpret the construction as expressing the speaker's wish momentarily to disregard his or her knowledge that the condition being considered is not true.

(7) If they hadn't found that water, they would have died =

I want to think for a moment: they didn't find that water
I know that this is not true
I say: if they didn't find that water, they died

This was progress no doubt – but before long defects in the explication above became apparent. For one thing, it was questionable whether the hypothetical prime 'moment' could be legitimately used in a durative frame, i.e. in the expression 'for a moment'. It was also questionable whether 'truth' in the literal sense (being TRUE) was really the issue regarding the status of the protasis. There were other, independent reasons to think that "factuality" concerns knowledge, i.e. the prime KNOW, rather than truth as such. The "counterfactual attitude", so to speak, would better be depicted as a short-term suspension of knowledge. But knowledge of what? Arguably, in the case of "real" past counterfactuals, knowledge of a particular time. This line of thought led Wierzbicka to propose the following explication:

(8) If they hadn't found water (at that time), they would've died =

I know something about that time
[i.e. they found that water at that time]
I want to think for a short time that I don't know it
when I think this I say:
if they didn't find water at that time they died

The conditional sentence in the final component is incompatible with the speaker's knowledge, as presented in the initial component. Nonetheless, the explication as a whole is coherent because, as the middle component shows, the speaker signals that he or she is intentionally suspending that knowledge for the time when the conditional statement is being made.

This approach can accommodate the existence, in different languages, of specialised counterfactuals and related constructions. To give but a single example, in Polish the "counterfactual" marker *gdyby* can be used also for hypothetical statements which are not contrary to known facts but which are nonetheless presented as highly speculative. In sentences like (9), the speaker seems to deny that what is envisaged in the conditional sentence is a serious possibility, and yet does not wish to reject such a possibility altogether.

(9) *Gdyby znalezli tę wodę to by nie umarli* =
if-IRR find:3PL.PAST this:ACC.SG water:ACC.SG then would NEG die:3PL
'If they found that water, they wouldn't die.'

I don't say: I think this can happen [they will find that water]
I want to think for a short time that it can happen
when I think this I say:
if they find this water they will not die

Though a comprehensive NSM analysis of the semantics of counterfactuals remains a pressing task for the future, it should be clear that a promising start has been made, and certainly that the counterfactual has no claim to the status of a semantic prime.

The problem of TOUCHING

For a long time, the NSM inventory of primes seemed skewed in favour of the abstract, non-physical world, but the addition in recent times of new spatial primes, new deictic elements, experiential primes and other "subjective" elements "bring[s] the set of primitives down to earth (from its previous heights of abstraction)" (Wierzbicka 1996a:111). One physical property which has

remained resistant to analysis within current models concerns "contact". It seems obvious that innumerable verbs of physical action, including *hold*, *scratch*, *slap*, and *cut* require reference to contact in their semantic structure, as do tactile adjectives such as *smooth*, *rough*, and *prickly*, and spatial prepositions such as *on* and *against*. But how is the relationship of physical contact – one thing touching another – to be represented within the metalanguage of semantic primes?

In the austere primitive inventory of the 1970s and 1980s (Wierzbicka 1972, 1980), contact was supposed to consist of the co-location of parts, as in (10a). This was not satisfactory, however, if only because the right-hand side of the equation could be satisfied by the situation of two objects being very close together without actually touching. In an effort to overcome this problem, a more complex explication was put forward, as in (10b), but this is unacceptably counter-intuitive.

(10) (a) 'X is touching Y' =
part of X is in the same place as part of Y

(b) 'X is touching Y' =
one can't think about part of X:
this part of X is not in the same place as part of Y

If "contact" appears to be resistant to explication, could it then be a semantic prime? And if so, what is the best choice of exponent for the notion, i.e. the term which most perfectly expresses the requisite notion and which can serve as a basis for crosslinguistic identification?

For a brief moment, the term *on* was considered for this purpose, but it was soon rejected. This was not so much because of the rampant polysemy of English *on* (after all, English *have* is polysemous but it still serves as a primary exponent of a semantic prime), but because *on* can be shown always to express extra semantic content, in addition to contact (cf. Goddard in press a).

The current proposal is that TOUCH (or perhaps more specifically, BE TOUCHING) be taken as the exponent of the prime. The canonical frame refers to two things X and Y in a static relationship, such that 'X is touching Y somewhere'.[6] Whether or not this notion proves to be directly expressible in all languages awaits comprehensive testing, but initial indications are positive.

A locational predicate: BE SOMEWHERE?

Various approaches to natural language semantics have assumed the existence of a primitive locational predicate; for example, the atomic predicate BE.AT of Role

and Reference Grammar (Van Valin and LaPolla 1997). In contrast, the tradition in NSM research is to posit a locational prime which is usually represented in a "substantive" form as SOMEWHERE(PLACE). The locational prime, on this conception, parallels the personal and the non-personal substantives SOMEONE (PERSON) and SOMETHING(THING). It is of course recognised that locations can be "predicated" of individuals, people and things. Wierzbicka (1996a:33) enunciates the long-standing NSM position when she says:

> [I]n English the basic locational primitive may take the form BE SOMEWHERE, but it is not possible to separate the meaning into two components, one corresponding to the verb *be* and the other to *somewhere*.

It may be worthwhile, nevertheless, to reconsider this position, because there are indirect arguments in favour of an analysis which would separate a verb BE (in a strictly locational sense) from the substantive SOMEWHERE(PLACE). On this analysis, the expression BE SOMEWHERE consists of a verb BE and a locational complement such as SOMEWHERE, HERE, or a locational phrase (NEAR ME, ABOVE THIS PLACE, INSIDE THIS THING, etc.). This putative locational BE would require a locational complement, in much the same way that the verb DO requires a substantive complement SOMETHING. What are the arguments in favour of such an analysis?

The first argument begins with the observation that there is a difference between locational "predication" and attributive predication. For example, the nature of what is being said about Mary is different in (11a) and (11b):

(11) (a) Mary is somewhere else.

(b) Mary is a good person.

On the standard NSM view, this difference is entirely due to the nature of the predicate nominal, i.e. 'somewhere else' vs. 'good person'. This amounts to saying that English locational *be* and copula *be* have the same status, i.e. they are both semantically empty, language-specific grammatical props. If this is so, however, how is it that there is a difference between 'being a place' and 'being in a place'?

(12) (a) Sydney is a place (a big place).

(b) Mary is in Sydney.

(c) Mary is here.

A second reason for thinking that locational BE may be a prime is that it would allow us to speak, in acceptable NSM syntax, of 'being with someone' – on the additional assumption that locational BE has a complement or valency option which can be filled by SOMEONE. The locution 'being with someone' would be useful for writing cultural scripts and explications about how to behave when one is 'with' particular kinds of people.

Interestingly, there is typological evidence in Stassen's (1997) survey of "intransitive predication" that locational predicates are almost always characterised (potentially at least) by the presence of a "supportive lexical item which has the morphosyntactic characteristics of a verb" (p.55). That is, the use of "locational copulas" is far more widespread and consistent across languages than the use of copulas with property, quality or nominal predicates.

The possibility that "locational BE" is a lexical universal deserves further, dedicated, cross-linguistic testing.

5.1 On-going work on NSM grammar

In the course of the research reported in this volume and its companion volume (Goddard and Wierzbicka Eds 2002), a number of significant revisions have been made to the set of initial hypotheses advanced in Wierzbicka (1996a). The universal syntax of BEFORE and AFTER, for example, is now seen as fundamentally "adverbial", rather than adpositional, in character (see Goddard and Wierzbicka, vol. I, section 2.4). This outcome is largely due to Robert Bugenhagen's work (circulated as early as 1994) on Mangaaba-Mbula, reinforced by Tong *et al.* (1997) on Cantonese. Bugenhagen (see this volume, section 1.16) was also responsible for revisions to the syntax of KIND. Hilary Chappell and Catherine Travis have brought to light puzzling differences in the combinability of VERY with MUCH/MANY in Chinese and Spanish, respectively (see vol. I, sections 5.14 and 4.8.3), whose explanation has yet to be discovered.

Other innovations have arisen as an outcome of descriptive-analytical projects. For example, it was during efforts to explicate the counterfactual construction that the possibility emerged that the element TIME could function in the role of a topic of KNOW, i.e. that universal grammar allowed the locution 'know something about a time'; cf. explication (8) above. This suggested that TIME could function also as a topic of THINK (e.g. 'to think about a time'), and with further attention it emerged that there were still other useful combinatorial options involving TIME; for example, the expression 'at times like this' seems useful in formulating explications and cultural scripts about attitudes to life and changing circumstances. As an example of a different kind, Jean Harkins' (1995)

typological study of WANT-constructions and Catherine Travis' examination of obligatory subjunctive marking in Spanish (vol. I, sections 4.2.3 and 4.11.3) contributed greatly to clarifying NSM thinking on the "indexicality" of some morphological marking (cf. Goddard 2002a).

It is not my goal here to review these and other recent innovations in any depth, merely to convey some sense of a research program which is dynamic and evolving – in which new ideas emerge from the interplay of theoretical work, varied descriptive practice, and cross-linguistic testing. In the interests of concreteness, I will describe some problems of current concern in work on NSM syntax. (I would like to thank Marie-Odile Junker for insightful discussion of these problems.)

A new syntactic concept: Compound valency

Essentially the idea of "compound valency" is that the valency structure of a semantic combination need not be built up in a strictly compositional fashion from the valency structures of the constituent elements, but may be more elaborate (or, presumably, less elaborate).

Consider first the well-established frame in (13) below. It looks superficially like a simple expansion of the complement SOMETHING in (14a), via the intermediate steps in (14b) and (14c).

(13) X did something good for Y.

(14) (a) X did something.

(b) X did something good.

(c) This was good for Y.

But things are not so simple – because the combination 'something good for Y' is possible **only** as the complement of DO. Expressions such as, for example, 'something good/bad for Y happened' (or 'something good/bad happened for Y') are not well-formed. In other words, the combination 'do something good for someone' seems to have the status of a syntactic template or "construction" (cf. Goldberg 1995; Wierzbicka 1988).

As a second, more speculative, example, consider the elaborated frame with FEEL in (15a) below. This kind of expression, depicting, so to speak, a "directed feeling", is extremely useful and makes good intuitive sense in explications for various emotions and attitudes, and it has in fact been used in various descriptive

studies. From the point of view of strict NSM syntax, however, the frame in (15a) has been regarded up to now as a language-specific formation of English, not available to universal grammar, because it was known that the simpler frame in (15b) is not available in many languages.

(15) (a) X feels something good/bad towards Y.

(b) X feels something towards Y.

In light of the current discussion, however, this conclusion need not follow. Frame (15a), realisable also as 'X has good/bad feelings towards Y', may be a compound valency possible only with the evaluators GOOD and BAD. Cross-linguistic investigation is urgently called for on this question.

Finally, consider the syntactic frames shown in (16a) and (16b) below. This kind of "valenced thought" about someone seems essential in order to depict many social attitude and emotion concepts, e.g. *love*, *respect*, *admiration*, *contempt*, *hate*, and it seems well attested across languages (with the proviso, discussed below, that sometimes an "adverbial" version of the evaluation is more natural). It has previously been assumed, therefore, that the simpler frames in (17a) and (17b) were also available.

(16) (a) X thinks something good/bad about Y.

(b) X thinks good/bad things about Y.

(17) (a) X thinks something.

(b) X thinks something about Y.

This assumption is challenged, however, by evidence from a range of languages. Frame (17a) seems impossible, for example, in languages as different as Mangaaba-Mbula (this volume, section 1.2.1), German (**X denkt etwas*) and French (**X pense quelque chose*). It is true that one can ask in these languages the equivalent of 'What do you think?' (e.g. German *Was denkst du?*, French *Qu'est-ce que tu penses?*), but what these questions are seeking is an answer with a "*that*-complement".

The situation with frame (17b) is not fully clear at the moment. It could be that this frame is universally available; that is, that a substantive complement of THINK is possible provided that the "topic of cognition" (i.e. the 'Y' argument in (17b)) is specified. Such a result would perhaps run counter to expectations,

inasmuch as it suggests that the topic plays a more important role in relation to THINK than do comparable valency extensions in relation to KNOW and SAY; but this would not be an instance of compound valency. (In this connection, it is interesting to note that there is no cross-linguistic problem with 'X thinks about Y', i.e. with a topic argument but with no substantive complement; cf. Mangaaba-Mbula *-kam=ŋgar pa Y*, German *denken an Y*, French *penser à Y)*.

On the other hand, it may be that the frame in (17b) is not universally available, but that, even so, the "valenced thought" frames in (16a) and (16b) are possible as an instance of compound valency (as if the evaluator, GOOD or BAD, required a substantive "host"). If so, the configuration 'think something good/bad about Y' would have construction status. Further cross-linguistic investigation is required.

In some languages, the equivalents of the frames in (16) employ adverbial counterparts of the evaluators, rather than combinations of adjective plus substantive. For example, in the Italian sentence in (18), adverbial *bene* 'well' and *male* 'badly' appear to be functioning as portmanteaus for 'good things' and 'bad things', respectively (Maher 2000:57-60). The effect under discussion is still evident, however, in that adding these adverbials (with the intended sense) is possible only if a topic of cognition is added at the same time. [7]

Italian:

(18) *Questa gente pensa bene/male di te.*
this people think:3SG.PRES well/badly of you
'These people think good/bad things about you.' [8]

It must be highly suggestive that these three putative instances of compound valency all involve GOOD and/or BAD. If the phenomenon is real, it may be that composition with GOOD and BAD is the main source of compound valency (presumably because GOOD and BAD have their own valency extensions, GOOD FOR and BAD FOR).

Varieties of adverbial modification

Returning to the verb THINK, it should be mentioned that, just as the frame 'X thinks something' is non-viable cross-linguistically, so too are the frames in (19) below; for example: German **Ich denke etwas wie dieses*; French **Je pense quelque chose comme ça*. These frames were used extensively in earlier explications for emotions and for speech-act verbs, so it is fortunate that the same functions can be served by the frames in (20); for example: German *Ich*

denke so 'I think so (thus)'; French *Je penses comme ça* 'I think like this' (cf. *ainsi* 'like this').

(19) (a) X thinks something like this: – –

(b) X says something like this: – –

(20) (a) X thinks like this: – –

(b) X says like this: – –

In terms of its functional role, the phrase 'like this' in (20a) and (20b) can perhaps be regarded as an "outer level" adverbial. At least in the case of SAY, there has to be a way to allow also for a "closer" level of adverbial function, such as when one says 'X said it like this' and demonstrates a soft or high-pitched tone of voice. Presumably manner adverbs such as *quickly*, *loudly*, *angrily*, and so on (and manner adverbial phrases) also involve "LIKE-phrases" in their semantic structure (cf. Goddard and Wierzbicka, vol. I, section 2.5, pp.78-79). Evidently then, a LIKE-phrase can combine with a predicate in more than one way (several languages in the present volumes have different options for these functions, e.g. Malay, vol. I, section 3.17.1).

A further complication is presented by direct "manner evaluation" of predicates such THINK, SAY, DO and LIVE, i.e. in expressions such as 'to think well', 'to say something well', 'to do something well', and 'to live well'. In such locutions, the evaluator meanings GOOD and BAD seem to combine with the predicates in a different fashion again (cf. Wierzbicka, this volume, section 2.4). One possibility to be considered is that the prime LIKE has a "substantive" variant – WAY – which can combine with evaluators and other nominal modifiers. This would enable us to form a new type of manner adjunct, such as 'in a good way' and 'in a bad way'. An independent argument for this is that it may well be necessary to speak of people doing, thinking, or saying something 'in the same way'. And this locution 'in the same way' looks like a composite of the determiner THE SAME and LIKE (as if: 'in the same way' = 'in the same "like"'). Similarly, it might be necessary in explications to say that certain people did, thought, or said something 'in another way' (i.e. 'in another "like"'); or to speak of people being able to do something 'in two ways' or 'in many ways'. This, of course, needs be tested crosslinguistically.

In touching on these matters here, it is only fair to acknowledge that similar problems have been of concern to functional grammar (e.g. Foley and Van Valin 1984; Van Valin and LaPolla 1997; Dik *et al.* 1990; cf. also Cinque 1999), under

the rubric of the "layered" structure of the clause. An overall account would also need to incorporate concepts of temporal and durational adjuncts, locus arguments and locational adjuncts, and so on. Within the NSM approach to syntax, a start has been made on these problems but many details remain to be properly explored. Needless to say, an NSM treatment will be based on semantic prototypes and lexical exemplars drawn from the universal semantic metalanguage (cf. vol. I, chapter 2 and this volume, chapter 4) rather than on conventional structural or functional models of the clause.

It is time now to emerge from this thicket of immediate problems. They are, clearly, matters of detail – important details, but details nonetheless. It is time to take a longer view of the NSM research program.

5.2 Concluding remarks

In the thirty years since the publication of *Semantic Primitives* in 1972, the mode of operation of the NSM research program has been akin to that of so-called "normal science" (cf. Kuhn 1970; Lakatos 1970, 1978). There has been internal consensus on the hard core of fundamental goals and assumptions – the quest to identify the indefinable semantic elements in natural language and to use these as a basis for a "self-explanatory" system of meaning representation. On the other hand, a number of auxiliary hypotheses[9] have been revised or replaced in the light of empirical work and the "model NSM" has passed through a series of progressive refinements and expansions.

From the onset, Wierzbicka's attitude, and that of most other NSM researchers, has been the attitude which is known to philosophers of science as "scientific realism" (cf. Boyd 1991), i.e. commitment to the discovery of a true or real picture of the world. For example:

> There is no reason in principle why the gap between theory and empirical fact should be any wider in semantics than in physics or chemistry... [A]n explicit semantic theory... must satisfy the basic requirements of contemporary scientific theory, that is to say, it must account for the observed facts and it must be able to predict facts as yet not discovered. (Wierzbicka 1972:3,25)

In the intervening years, the theoretical underpinnings of the NSM program have become more precise and coherent and the model metalanguage has become progressively better specified.[10] At the same time, the theory has expanded in its explanatory power and scope. The present volume has focused rather intently on the structure of the universal semantic metalanguage (and especially on its syntax), linking this with lexical semantics, with general

language description, and with language typology. At the same time, NSM research is expanding in other directions, into the area of inferential pragmatics (with a strong cultural orientation; hence, ethnopragmatics) and into broader cultural description, via the theory of cultural scripts; cf. e.g. Ameka (1994, 1999); Goddard (1997, 2000); Peeters (2000), Wierzbicka (1991, 1994, 1996b, 1998, in press). There have also been initial NSM studies into first language acquisition and second language pedagogy (Goddard 2001b, 2002b, in press b; Tien 1999).

If the natural semantic metalanguage is a factual reality, describing it in full and mapping out its properties is a finite task. As this book comes to a close, this task has not yet been finished, but I believe that the bulk of it has been done. With luck, the task will be finished within the current decade. When this is achieved, however, it will not be the end of the story. Quite the contrary. As the discovery of the chemical elements and of their basic combinatorial properties opened new vistas for chemistry, so it can be expected that comprehensive description of the natural semantic metalanguage will open new vistas for the study of language, thought and culture. There is an enormous amount yet to be discovered about the language-specific semantic structuring of vocabulary and grammar (lexicogrammar), about discourse structure and discourse practices, about non-verbal communication, and a panoply of cultural and semiotic phenomena. One can expect new fields to open up also in the study of cognitive anthropology and psychology (cf. D'Andrade 2001) and evolutionary psychology (cf. Jones 1999), and for an increasing array of practical applications in areas such as intercultural communication, language teaching, legal education, and language therapy.

The twentieth century was not a bright one for the study of meaning. The twenty-first century should be very different.

Abbreviations

CONTRA	counterfactual particle	PAST	past tense
CP	conjunctive particle	PRES	present tense
GEN	genitive	SUBJ	subject marker
LINK	linking suffix	TOP	topic marker
OBJ	object marker		

The Cantonese expressions are given in the orthography recommended by the Linguistics Society of Hong Kong.

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Notes

1. John Locke and Gottfried Wilhelm Leibniz both touched on ‘moment’ and related concepts in discussions of the relationship between time and duration. For example, Locke (1976:93 [1690]) characterised an ‘instant’ as “a part of duration… wherein we perceive no succession”. Leibniz (1996:153 [1765]) compared instants (in time) and points (in space): “points and instants are not parts of time or space, and do not have parts either. They are only termini”. Such issues had been discussed since classical times in relation to Zeno’s paradoxes of motion. For example, if an arrow in flight is at a different location at every moment, when does it move? Aristotle had replied that time is not truly composed of “nows” (i.e. of moments) and that what may be true at a moment is not necessarily true over a period (cf. Sorabji 1988).
2. Treatments of aspect categories in logically oriented frameworks often make reference to ‘moments of time’, and to the relationship between moments and intervals (i.e. periods) of time. For example, an interval may be defined as a ‘set of moments’, each of which can be labelled by a number – t_1, t_2, t_3, etc, (cf. Dowty 1979:73-78, 138-145). Telic outcomes can then be described in terms of a state being (i.e. becoming) true at one moment (the “end point”), which was not true at the immediately preceeding moment.
3. English actually has a range of counterfactual and related constructions, much discussed in the literature. It is generally agreed, however, that “doubly negative counterfactuals” about real past events, as in (4), are the most prototypical.
4. Hasada (1997) also noted that discussions of counterfactual morphosyntax often rely on example sentences whose counterfactuality is pragmatically self-evident; for example, ‘If we hadn’t found that water, we would have died’.
5. Bloom (1981) started a long and sometimes heated controversy about counterfactuality in Mandarin Chinese, which has tended to focus on the claim that

Chinese people are less inclined or less able to engage in "counterfactual thinking" than Europeans, rather than on close linguistic analysis. Wu (1994) is a valuable exception. Few studies discuss nuances of meaning and usage in relation to realistic example sentences and most do not distinguish properly between counterfactuality and hypotheticality. There is no doubt that Chinese people spontaneously produce conditional sentences in situations where the protasis is mutually understood to be counterfactual, e.g. 'if she hadn't hit the brakes, there would have been an accident', and there can be no doubt that Chinese people engage in counterfactual reasoning when there are good reasons to do so. Many commentators agree, however, that Chinese generally do not waste their time with reasoning which begins with ridiculous premises, e.g. 'if circles were triangles', 'if the Ching dynasty was still in power'. The preference in Chinese culture (as in most cultures in the world) is for talking about practical, real-world situations. In the NSM framework, this kind of preference could be made explicit by means of cultural scripts.

6. Some languages have specialised "verbs of touching". For example, as well as *kasat'sja* 'be touching', Russian has the verb *trogat'* (roughly) 'touch something so as to move it', which would be used in equivalents to English sentences like *Don't touch!* (spoken to a child). Some languages exhibit formal polysemy, and other interesting interrelationships, between TOUCHING and MOVE; cf. Viberg (1998); Vandeloise (1996).
7. Using the Italian adjectives *buono* GOOD or *cattivo* BAD in such contexts is problematical: *pensar cose buone di Y* 'to think something good of Y' is unacceptably odd, and the corresponding use of *cattive* introduces an additional, unwanted semantic element (more malicious and "nasty" than the construction with *male*).

   French presents an intriguing blend of adverbial morphology and substantive syntax. The normal locutions *du bien* and *du mal* (as in, *Je pense du bien/mal de lui* 'I think good/bad of him') are nominal expressions consisting of a partitive article (*du)* and words which are identical in form to adverbs, i.e. *bien* rather than *bon* GOOD, *mal* rather than *mauvais* BAD. A similar pattern is found elsewhere, e.g. *le bien* 'good things, goodness', *le mal* 'bad things, evil'. There is clearly scope for a detailed comparative study of these aspects of grammar and semantics across Romance languages.
8. English also permits adverbial *well* and *badly* to collocate with THINK (OF), but in English the usage is semantically complex and does not express the same simple meaning as the canonical NSM expressions in (13). Essentially, 'to think well/badly of someone' suggests an attitude which is global or holistic, perhaps implying some kind of generic reference to time, e.g. 'I think well of him' = 'when I think of him, I think something good about him'. Cf. this volume, sections 2.4 and 2.6.2 for discussion of a related contrast between 'feeling bad' and 'feeling something bad'.
9. For example: the early assumption that in the semantic metalanguage one could expect a 'one form–one meaning' correlation, the assumption of "conceptual independence" of semantic primes, the assumption that the syntax of the metalanguage would consist of a few simple grammatical patterns. For discussion, see Chapter One of volume I, Wierzbicka (1996a), Goddard (1994), and Goddard (1999).
10. In my view, the NSM model is moving steadily towards "formalisation", which in the true sense means systematisation and precise specification (in this case, precise identification of the basic semantic elements and of their rules of combination). Unfortunately, in linguistics the terms "formal" and "formalisation" are widely used

(or misused) in a much narrower sense, to refer to the property of a system which works mechanically or "blindly" on symbols without regard to their meanings. The issue deserves more space than can be afforded here (see also Enfield's discussion in this volume, section 3.19).

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