Thinking across languages and cultures: six dimensions of variation

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Abstract

This article surveys cross-linguistic variation in ways of talking about 'thinking'. It begins by summarizing research indicating that there is a universal semantic prime THINK *which can provide a stable reference point for cross-linguistic comparison. Six different dimensions of variability are then canvassed: different patterns of lexical polysemy, different degrees and modes of lexical elaboration, different ethnotheories of the person, different ways in which think-related messages can be encoded morphosyntactically, different cultural scripts which may encourage or discourage particular ways of thinking, and differing patterns of usage in discourse. The article is framed within the natural semantic metalanguage theory.*

Keywords: cognition; semantics; thinking; natural semantic metalanguage; typological semantics, polysemy.

1. Introduction

The present exercise in typological semantics is framed within the theory and methodology of the Natural Semantic Metalanguage (NSM) approach to linguistics, originated by Anna Wierzbicka (1972, 1992a, 1996; Goddard and Wierzbicka 1994, 2002; cf. Goddard 1998a). This is a comprehensive approach to cross-linguistic semantics, based on a long and incremental research program, which uses reductive paraphrase in ordinary language as its method of semantic representation. The general outlines of the NSM theory are well-known (but see Goddard 1998b for a review of popular misconceptions), so I will present only the bare bones here:

i. The foundational assumption is that every natural language is adequate as its own semantic metalanguage ("metasemantic adequacy").
ii. From this, it follows that every language has a non-arbitrary and irreducible semantic core, with a language-like structure: a mini-lexicon of semantic primes (lexical units with indefinable meanings) and their associated mini-grammar.
iii. It is furthermore assumed, and a growing body of hard cross-linguistic research supports this assumption, that there is substantial universality in both the lexicon and the grammar of semantic metalanguages.

Aside from providing a suitable theoretical framework, the NSM program has produced a great many fine-grained cross-linguistic studies with a direct bearing on this topic[1].
    Many scholars accept as a matter of simple logic, that a typological inquiry requires some kind of notional or semantic framework of comparison, some *tertium comparationis*, but few yet accept that the semantic foundations of typology must submit to the same principles as semantics generally. In particular, it must avoid the pitfalls of obscurity and circularity, and of terminological ethnocentrism. It would be obscure and circular, for example, to attempt to "define" the concept of "thinking" by reference to expressions such as *mental* (or *cognitive*) *processes*, because terms like *mental* and *cognitive* are not any clearer than *thinking* in the first place. Nor does substituting these Latinate terms in place of the humble *think* lead to any

improvement in accuracy. Quite the contrary, in fact, because there are other kinds of mental or cognitive processes aside from thinking – such as wanting, knowing, and feeling, for example.

It will also be obvious to anyone with a knowledge of other languages that abstract terms like 'mental' and 'cognitive' are highly English-specific. Hence, using them to characterise meanings in other languages is to engage in terminological ethnocentrism, i.e. to impose culturally alien categories as an interpretive grid on other linguistic and conceptual systems. The same thing occurs when English-specific verbs such as *believe*, *judge*, or *consider*, or English-specific ethnopsychological categories, such as "mind", are used to gloss the meanings of words from languages which lack anything corresponding to the English concepts. Terminological ethnocentrism necessarily introduces distortion and inaccuracy because it imposes the perspective of a cultural and linguistic outsider.

Consider two other cross-linguistic projects which have for a long time been based on complex, culture-specific categories, namely, research into 'emotions' and into 'colours'. Some of the leading researchers in cultural psychology and cognitive anthropology (Shweder 2002; D'Andrade 2001) now reject both the meta-category of 'emotion' and more specific terms such as *sadness*, *anger*, *fear*, and *surprise*. Much better results come from a more finely grained and culture-independent set of analytical categories, anchored in lexical universals such as FEEL, WANT, KNOW, THINK, GOOD, and BAD (cf. Wierzbicka 1999, Harkins and Wierzbicka 2001). Similarly, some cognitive psychologists now argue that taking 'colour' for granted as an analytical meta-category amounts to taking "a view of the world's languages through the lens of our own category, namely, a systematic sorting of each language's vocabulary by reference to how, and how well, it matches our own" (Lucy 1997: 331).

On the other hand, if the common reference point is a universal like 'want', for example, cross-linguistic comparison can be conducted in a productive and clear fashion, as Jean Harkins (1995) has shown in her typological-semantic study of 'want' and desiderative constructions. So, our first priority in the present study must be to assess the cross-linguistic viability of the concept 'think' itself. Is it like 'colour' or 'emotion' (a complex and culture-specific category), or is it like 'want' (a simple and universal category)? In this respect, we are fortunate that a substantial body of cross-linguistic research already exists on this subject.

2. Empirical universals of 'thinking'

Research on a wide range of languages indicates that THINK is a universal semantic prime, i.e. an indefinable meaning which exists as the meaning of a lexical unit in all languages (Goddard and Wierzbicka 1994, 2002; Goddard 2001a). Other related semantic primes include KNOW, FEEL, SEE, HEAR, WANT, DO, SAY, TRUE and others. Exponents of semantic primes need not be morphologically simple, because morphological complexity and semantic complexity do not always coincide. For example, the English word *someone* is an exponent of a semantic prime, even though it consists formally of two morphological units (but crucially, in meaning *someone ≠ some + one*). It is not unexpected, therefore, that in some languages the exponent of THINK is formally complex, as in Mangaaba-Mbula (PNG), where it is a composite form *-kam=ŋgar* (where *-kam* by itself expresses DO). Other examples include the Australian language Kayardild, where *marral-marutha* THINK is a compound 'ear-put' (Evans 1994), and Kalam (PNG), where the expression *gos ŋŋ-* includes *ŋŋ-,* which by itself means KNOW (Pawley 1994). In general, however, NSM findings support Fortescue's (2001) conclusion that exponents of THINK are typically monolexemic and semantically opaque.

Table 1. *Exponents of selected semantic primes across several widely dispersed languages*

	Spanish	Malay	Yankunytja-tjara	Lao	Mbula	Chinese
THINK	*pensar*	*fikir*	*kulini*	*khùt1*	*-kam=ŋgar*	*xiăng*
KNOW	*saber*	*tahu*	*ninti*	*huu4*	*-ute*	*zhīdao*
FEEL	*sentir*	*rasa*	*tjuni*	*huu4.sùk2*	*-yamaana/lele-*	*gănjué*
SEE	*ver*	*lihat*	*nyanganyi*	*hên3*	*-re*	*kàndáo*
HEAR	*oír*	*dengar*	*kulini*	*daj4.ñin2*	*-leŋ*	*tīngdáo*
WANT	*querer*	*mahu*	*mukuringanyi*	*jaak5*	*lele-=be/=pa*	*yào*
DO	*hacer*	*buat*	*palya<u>n</u>i*	*hêt1*	*-kam*	*zuòŸ*

Of course polysemy is a linguistic fact of life, and frequently occurring items are more likely than most to be polysemous. It should therefore come as no surprise that exponents of THINK often have language-specific polysemic extensions, as will be canvassed in section 3. This means that when we identify exponents of semantic primes in a particular language, we are really dealing with lexical units rather than with lexemes;[2] for example, in saying that English *feel* is an exponent of a semantic prime, what we mean is that one specifiable sense of the lexeme *feel* is a semantic prime. As discussed in later sections, the frequency and normal range of use of exponents of semantic primes do not correspond across languages, due to the availability of language-specific near-synonyms and grammatical encodings, and the influence of culturally-driven discourse preferences.

Every semantic prime has a certain "conceptual syntax", i.e. certain specifiable syntactic possibilities (combinatorics, valency and complementation options) as a consequence of its meaning. On present evidence, it appears that the array of frames displayed in (1) below are universally available to the prime THINK. In simple clauses, one may simply 'think about Y', as in (1a). In a more elaborate frame in which the verb also takes an indefinite substantive, i.e. SOMETHING, as a complement, one may 'think something about Y', as in (1b). One can also 'think like this', as in (1c). THINK can also take a propositional complement, as in (1d), though this construction is subject to certain restrictions (see below).[3]

(1)a.   X thinks about Y [topic of thought]
    b.   X thinks something (good/bad) about Y [complement]
    c.   X thinks like this: – – [quasi-quotational complement]
    d.   X thinks that [——]s [propositional complement]

This way of looking at THINK differs interestingly from Vendler's (1967:110-111) influential proposal that THINK has "two basic senses", one of which is a dynamic time-bound process ('thinking about' – "cogitation") and the other a timeless state ('thinking that' – "opinion"). For one thing, Vendler's dichotomy does not correspond to the facts of English in various ways (Wierzbicka 1998: 300-304). The 'think about' frame, for example, is not always process-like, at least in its elaborated version as in (1b); cf. 'I know they think something bad about me'. More importantly, the 'think that' frame is not always state-like and indeterminate in temporal location but on the contrary is perfectly compatible with "occurrent" thoughts, as one can see from sentences like 'I think that someone is knocking at the door' or 'for the first time I thought that we had a chance'.[4] In fact, it would appear from a cross-linguistic point of view that the "opinion-giving" function of English 'think that' is unusual and language-specific. In Swedish, for example, *tänka* THINK cannot normally be used with an *att*-complement, i.e. a that-complement, to state an opinion but it can take an *att*-complement to depict an occurent thought, as in (2), and in certain other contexts (for further discussion, see section 4.1).

(2)   *När   jag   hörde   det, tänkte   jag   att   vi   kanske   hade en   chans.*
        when   I   heard   that, thought I   that   we   maybe   had a   chance
        'When I heard that, I thought maybe we had a chance.'

Although THINK has a firm claim to the status of a basic and universal linguistic concept, it remains true that languages and cultures vary enormously in the way in which they elaborate this notion, in the significance it is accorded in daily life, in its grammaticalisation, how it figures in discourse, and so on. Just as the existence of basic notions of time, for example, hardly overshadows the huge differences between linguistic and cultural elaborations of basic temporal concepts, so it is with notions of thinking. In both domains the huge variability greatly overshadows the tiny core of universality. To adapt a phrase of Richard Shweder's (1993:517), the situation is one of "universals without uniformity". The remainder of this paper seeks to provide a broad overview of cross-linguistic variability in ways of talking about thinking. For expository purposes, I have identified six dimensions of variability but no claim is made that this is an exhaustive or water-tight typology. The general trajectory is from examination of lexical phenomena, then on to grammatical phenomena, and finally to the culture and discourse levels. In order to cover more ground, the discussion is abbreviated at many points.

3. Lexical polysemy of 'think' verbs

3.1. Non-compositional polysemy (motivated homonymy)

One of the most intriguing lexical phenomena concerning exponents of the semantic prime THINK is referred to in the NSM literature as "non-compositional polysemy" to distinguish it from standard polysemy (based on shared meaning components). It can also be viewed as motivated homonymy. Both descriptions refer to a situation in which a lexical form which expresses a semantically primitive meaning, in this case THINK, can also express another primitive meaning, such as HEAR, SEE, SAY, or WANT. Since these other meanings are themselves semantically primitive, i.e. indivisible, there can be no common element shared between them and THINK. Since a pair of meanings such as THINK and HEAR, for example, do not share any common component, when a lexical element can express both meanings it would be valid to describe it as homonymy. For example, it would be valid to say that Yankunytjatjara (see below) has two words: *kulini₁* THINK and *kulini₂* HEAR. But on the other hand, the roster of possible prime meanings which can share an exponent with THINK is obviously not arbitrary, and the term "homonymy" normally suggests an accidental or arbitrary coincidence of formal realisation. In NSM terminology we speak of pairs of meanings such as THINK and SEE, THINK and HEAR, THINK and SAY, as having non-compositional affiliations, and employ the term "non-compositional polysemy" to designate the linguistic relationship. The nature of non-compositional affiliation is itself a fascinating research topic.

Documented patterns of non-compositional polysemy concerning THINK include: THINK with SEE, THINK with HEAR, THINK with both SEE and HEAR (Sweetser 1990, Evans and Wilkins 2000). Another set of correlations is THINK with SAY, e.g. Ahtna *-nii* 'say, think, consider'; Xhosa *uku-thi* 'say, think, call' (Fortescue 2001). Other more complex patterns are attested as well. In all cases which have been examined carefully there is language-internal evidence for a polysemy analysis. As examples we can consider thumbnail sketches from two Australian languages, Yankunytjatjara and Bunuba.

Yankunytjatjara, Central Australia (Goddard 1991; cf. Evans and Wilkins 2000: 563-5), has THINK-HEAR polysemy, but the two senses are easily distinguished on language-internal grounds, since each has a distinctive syntactic frame from which the others are excluded.

Only the THINK sense can take a quasi-quotational clausal complement (often introduced by *alatji* 'like this'), as in (3). Only the 'hear, listen' sense can take a non-finite circumstantial complement, as in (4). There is also an additional sense, roughly 'heed', distinguished by its capacity to take a locative case complement, as in (5).[5]

(3) *Ngayulu   alatji   kulini,   "Tjinguṟu-la .."*
     I   like.this   think:PRES   maybe-we
     'I think like this about it, "Maybe we ...".'

(4) *Ngayulu   aṉangu-ngku   wangkanytjala   kulinu.*
     I   people-ERG   talk:NOML.LOC   hear:PAST
     'I heard people talking.'

(5) *Wati   katjangku   mamangka   kulintja   wiya.*
     man   son:ERG   father:LOC   heed:NOML   not
   '   The son won't heed his father.'

Bunuba, North-west Australia, exhibits "hyperpolysemy" in its verb root *ma* (Knight forthcoming), which in certain contexts, as in (6), is up to five-ways ambiguous.

(6) *Ngaanyi=ma   ø-miy?*
     what?=I/I   3sgS-MA-PAST
     'What did he say/think/do/feel?' or 'What happened?'

Here I will concentrate mainly on the THINK–SAY polysemy. First of all, Knight observes that "speakers of Bunuba have no difficulty in discerning one meaning from another". Then she establishes that each of these meanings (and each of the other distinct meanings not covered here) has certain distinctive morphosyntactic properties. For example, when an extra argument is added to *ma* using the OBLique cross-referencing strategy, this new argument assumes the role either of addressee or locutionary topic, i.e. in this context *ma* can only mean SAY, never THINK (see note 2). Furthermore, if necessary the meaning contrast between THINK and SAY can be expressed unambiguously by means of formally complex expressions, which combine *ma* with nominal forms for 'head' and for 'mouth', respectively: *ma gun.gulu* 'think' vs. *ma thangani* 'say'. This makes it possible to contrast saying and thinking, as in (7).

(7) *Ngayini   binarri   nganggu thangani   nganggu gun.gulu nginjaga*
     1sgPRO   know   2sgOBL mouth/words   2sgOBL head   what

     gi-nj-i-ma?
     PRES-2sgS.NONFUTURE-INS-MA
     'I know what you said (your words) but what are you thinking (lit. ma + 'head')?'

Sometimes cultural factors may help explain particular instances of non-compositional polysemy, as a factor in establishing pathways of semantic change. In world-wide terms, for example, HEAR–THINK and HEAR–KNOW polysemy is not particularly common, but in Australia it is extremely common, an areal feature. In their landmark study documenting this phenomenon, Evans and Wilkins (2000: 580-585) identify "six cultural factors [which are] likely to generate the sort of communicative context in which a verb for 'hear/listen' would, by pragmatic inference, gain a more abstract cognitive reading such as 'think', 'know' or 'remember'". These factors include the role of hearing as the prototype of inwardly directed attention in the permanently public space of Aboriginal social life, Aboriginal ways of

"knowing the country" by remembering song cycles, and the primacy of hearing in the Aboriginal socialisation process.

Occasionally one encounters non-compositional polysemy whose rationale is functional, in a grammatical sense. This is the case for Longgu, Solomon Islands, where *una*, the exponent of THINK, is formally identical to the word meaning 'like this, thusly' (Hill 1994: 315). The link is presumably that LIKE THIS can be used to introduce a quasi-quotational complement of THINK, i.e. in the frame 'X thought like this: – – '. Compare the use of English 'like' in "teen talk" as an introducer of speech and thought complements (Romaine and Lange 1991). This grammatical frame is, of course, shared with SAY, which constitutes a non-compositional link between SAY and THINK.

3.2. Compositional polysemy

Sharply distinct from non-compositional polysemy (in principle, though not always at first blush) is ordinary compositional polysemy, i.e. a situation in which a single lexeme expresses not only the semantic prime THINK, but also one or more other related meanings which contain THINK as part of their meaning.

> A rather common situation among the languages of my sample is that a given language has a single, synchronically opaque basic word for general mental activity, like English *think*.... Such words display various kinds of polysemy, often linked to different patterns of syntactic behavior (Fortescue 2001: 30)

One common type of polysemic extension is for the THINK verb also to have a sense involving thinking about someone or something, and feeling something bad because of it. For example: in Mandarin Chinese: *xiǎng jia@* 'think, miss family' (Chappell 2002); in Yupik Eskimo: *cum´r(t´)-* 'think, worry'; Samoan: *mantu* 'think, feel lonely' (Fortescue 2001: 29); in Japanese *omou* 'think, pine for' (Onishi 1997: 221). Another common extension is to 'count' or 'calculate', as with Ewe *bu-* (Ameka 1994: 63), Lao *khit¹* (Enfield 2002: 169), or Amharic *assəbə´* (Amberber this volume).

The THINK verb commonly extends to a meaning akin to English 'intend' or 'would like to', i.e. a combination of THINK and WANT. For example, Mandarin *Wǒ& xiǎng qù* [I think go] 'I'd like to go'; Spanish *Pienso ir* [think:1SG:PRES go:INF] 'I intend to go'. Amharic, Swedish and many other languages show a similar pattern. Schematically:

(8)   X thinks to – – =
        X thinks: I want to – –
                (I will – –)

Conversely, certain other cognitive or experiential predicates, such as words for SEE, HEAR or FEEL often have polysemic extensions involving THINK. For example, English *see* can mean something like 'understand' (cf. *I see what you mean*) and something like 'evaluate as' (cf. *I see things differently*). A similar situation, but more highly elaborated, is found in Chinese (Yu, this volume). In French *entendre* can mean both 'hear' or 'understand'. Words for FEEL also commonly have polysemic extensions involving THINK, as with the English 'feel that' construction. For example, Malay *Aku rasa lebih baik kita pergi* [I feel more good we go] 'I feel it's best that we go'. Schematically:

(9)   I feel that – – =
        I feel something
        because of this I think that – –

4. Lexical elaboration

Doubtless all languages have a miscellany of language-specific expressions whose meanings involve THINK. For example, in English there are verbs like *forget*, *decide*, *understand*, *solve*, and many others; adjectives like *right*, *wrong*, *smart*, *stupid*, *confused*, and *careful*; and nouns like *mistake*, *idea*, *attention*, *sense*, and *reason*. The following is an attempt to identify and discuss some categories which vary cross-linguistically in interesting ways, constituting a second dimension of variation in ways of talking about thinking.

4.1. Language-specific epistemic verbs

Many languages have language-specific specialised verbs of thinking (including many so-called "epistemic verbs"), whose meanings also involve KNOW and/or TRUE, usually in combination with other elements. Some examples from European languages are given in (10). Since such verbs are semantically complex, it cannot be assumed that any of them will match up precisely in meaning across languages.

(10) English *believe, reckon, suppose, guess, assume, suspect, wonder, ...*
      German   *glauben, meinen, finden ...*
      Swedish *tro, tycka, anta, ana, ...*
      French   *croire, trouver, ...*

The number of such verbs varies dramatically across languages, with some languages (such as Yankunytjatjara) having only a handful. Wierzbicka (2002a) has claimed that English has an exceptionally large array of such verbs, even among European languages, and observes that it can be further expanded by way of phrasal collocations such as: *I should think, I would've thought, I'm inclined to think, I tend to think, I don't think, I don't suppose, I would guess, My guess is, My understanding is, I would argue, I would suggest,* and so on.

As an example of semantic analysis of an epistemic verb of English, one can take the verb *believe*, which plays an enormous role in English-language philosophy and "rational" Anglo discourse generally. Wierzbicka (to appear, ch. 5) contains a substantial treatment of this verb, especially in the epistemic phrase *I believe* (without complementise*r that*); e.g. in sentences like *I believe you can get custard in a tin*. Wierzbicka argues that *I believe* is a quasi-performative "epistemic qualifier" restricted to the first person present tense (like the uses of *I think,* without complementiser *that,* discussed in Section 8 below). Roughly speaking, it expresses something like a considered but cautiously expressed personal opinion. The phrase has a "parenthetical" syntax, in the sense that it can occur mid-clause or clause-finally, e.g. *You can, I believe, get custard in a tin,* and *You can get custard in a tin, I believe.*

The expression *to believe that* [6], on the other hand, is "stronger": it conveys something like conviction or commitment, a certain gravitas. Though it can occur with a first person subject, it is not restricted to first person or to the present tense; cf. sentences like *He believed that they shouldn't get the vote* or *They believed that Phar Lap had been poisoned by a rival stable*. Unlike epistemic qualifier *I believe,* the expression *to believe that* corresponds to the noun *belief*. Likewise, only *to believe that* can collocate with adverbs like *strongly*; compare, e.g. *He strongly believed that they shouldn't get the vote* with *?I strongly believe you can get custard in a tin*. Wierzbicka (to appear) discusses a range of other evidence and examples in context, which for reasons of space cannot be reviewed here[7], but all of it appears consistent with explication (11) below.

The initial component articulates the obvious link between *X believes that* and *X thinks that*. The subsequent set of components, introduced by 'X thinks about it like this',

characterise the nature of the "propositional attitude" involved in *believing* – that is to say, they characterise HOW X thinks about WHAT he or she thinks. This is a composite of three factors: an awareness that other people may think differently, the sense that one can articulate a reason for thinking as one does, and, furthermore, that one can justify or defend the value of thinking as one does. The last two factors are intended to account for the conviction and commitment conveyed by *to believe that* (and by the corresponding noun *belief*), and for the implication that something important is at stake.

(11)   *X believes that [– –] =*
        when X thinks about it, X thinks that [– –]
        X thinks about it like this:
            I know that someone else can think not like this
            I can say why I think like this
            I can say why it is good if someone thinks like this

    When a language has one or more common epistemic verbs (in addition to THINK), the existence of these verbs will skew the distribution and contextual interpretations of instances of the basic THINK verb. This effect is found in German and French, where *glauben* and *croire* usurp part of the potential range of *denken* and *penser*, respectively. The effect is even greater in Swedish, which like other Scandinavian languages has several common epistemic verbs, most notably *tro (att)* "believe (that)" and *tycka (att)* "feel (that), personally be of the view (that)". The glosses are enclosed in scare quotes here because it is important not to assume that these verbs coincide perfectly with anything in English. It would seem that *tro* is more evidentary in orientation than English *believe* and lacks the undertone of personal conviction of the English verb. Aijmer (1997: 15), for example, states that what is important for *tro* is that the speaker has reliable evidence that what is asserted in the proposition is true. An example follows in (12). Explication (13), which is given in both English and Swedish, unpacks the meaning of *tro* and enables it to be readily compared with that of English *believe*. (This explication was developed in collaboration with Susanna Karlsson.)

(12)   *Jag   tror   att   hon är på stranden.*
        I   believe that   she is at beach:DEF
        'I believe that she is at the beach.'

(13)   *Jag tror att Y =*

        I think now that Y
        I don't say I know it
        I think like this because I know something
        I know that someone else can think not like this

        nu tänker jag att Y
        jag säger inte att jag vet det
        jag tänker såhär på grund av att jag vet någonting
        jag vet att någon annan kan tänka på ett annat sätt

    Explication (13) is also consistent with the fact that it is *tänka* THINK – and not *tro* – which is used when a speaker is reporting a view about a factual matter which is not based on evidence, as in the textual example given in (14). When *tänka* THINK takes a propositional complement it also commonly occurs with the reflexive particle *sig* (or a variant), apparently indicating that the thought being articulated is more or less spontaneous and personal.[8]

(14) *Men   jag tänker   att jag nog   har   en   tre   fyra   år*
      but   I   think   that I   probably   have   a   three   four   years
      till   då   jag kan   vara   frisk.
      to   then I   can   be   healthy
      'But I think that I'll probably have about three or four healthy years left.'
          [elderly speaker in a newspaper lifestyle feature]

In addition to *tänka* THINK and *tro* "believe", Swedish also has the common epistemic verb *tycka*. This presents a matter of subjective evaluation based on feeling and/or personal experience, frequently with an ethical or aesthetic dimension. Aijmer (1997: 14-15) compares it with English 'find'. For example: *Han tycker att hon är söt/trevlig* 'He finds her pretty/nice' or 'He feels that she is pretty/nice.' Swapping *tro* for *tycka* would imply that the speaker is relying on reliable hearsay information, rather than reporting his or her own subjective evaluation.

Regardless of the precise semantics of *tro* and *tycka*, their existence has important implications for the normal range of use of *tänka* THINK, and equally for the pragmatic implications of the use of *tänka att* 'think that' with a propositional complement. Using *tänka* strongly implies the lack of factual evidence (otherwise one would use *tro*) and the absence of subjective evaluation (otherwise one would use *tycka*). In discourse-pragmatic terms then, English *think* and Swedish *tänka* are certainly not equivalent, nowithstanding their semantic equivalence.[9]

4.2. Lexical composites of THINK, FEEL and WANT

It appears that all languages have a greater or lesser number of words in which components of thinking, feeling, and wanting are intertwined in complex cognitive scenarios (attitudes, emotions, moods). As it happens, words of this kind have been a long-term focus of NSM researchers, with hundreds of proposed explications available in dozens of studies (see especially Wierzbicka 1999; Harkins and Wierzbicka 2001; Enfield and Wierzbicka 2002).

At least four semantic configurations appear to be widely attested: (i) thinking about what can happen and feeling something because of it (propositional attitudes), e.g. *hope, expect, look forward to, dread,* (ii) thinking about something for some time, so as to sustain a feeling ("active" emotions), e.g. *worry, rejoice, grieve, fret,* (iii) thinking good or bad things about someone and feeling something because of it (interpersonal attitudes), e.g. *love, admire, respect, hate, despise,* (iv) feelings associated with thinking (emotions), e.g. *happy, jealous, surprised, disgusted.* Examples (15)-(18) illustrate the kind of formats which NSM researchers have found useful in dealing with words of these four types.

(15) *X hoped that Y would happen* =
      X thought like this:
          Y can happen sometime after now
          it will be good if it happens
          I want this
      X felt something good because of this

(16)   *X worried about Y =*
         for some time, X often thought like this about Y:
             something bad can happen to Y
             I don't want this
             if something bad happens to Y, I want to know it
         X felt something bad because of this

(17)   *X loves person-Y =*
         X thinks good things about Y
         X wants to do good things for Y
         X wants good things to happen to Y
         X often thinks about Y
         when X thinks about Y, X often feels something good

(18)   *X feels pleased =*
         X feels something because X thinks something
         sometimes a person thinks like this:
             something good happened
             I wanted this
             because of this, this person feels something good
         X feels like this because X thinks something like this

Finally in this section on lexical elaboration, we can look outside the verbal realm into the domain of adverbs, discourse particles and interjections.

4.3. Language-specific "epistemic qualifiers": adverbs, particles, and interjections

One can perhaps use "epistemic qualifiers" as a cover-term for various linguistic devices – including adverbs, adverbial phrases, and particles – for qualifying one's statements, for hedging one's assertions, and for differentiating the strength of one's assent to a proposition. "Speaker-oriented" epistemic adverbs (Cinque 1999: 86) can be illustrated from English, which has them in large number (presumably serving the same communicative priority as the large number of English epistemic verbs); for example: *probably, possibly, conceivably, apparently, presumably, supposedly, reportedly, allegedly, arguably*.

THINK-related meanings can also be expressed as discourse particles and conversational formulas, though compared with adverbs these tend to be more "interactional" in meaning, in the sense of referring to the addressee's speech or reactions. Obvious English examples would be conversational formulas like *That's right!,* and *Good thinking!* (Wierzbicka 2002a), but on close examination other discourse particles may also disclose "cognitive" meaning components too. For example, it can be argued that English *wow*, and even *well,* contain "mental state" components such as 'I didn't think this would happen' or 'I want to think about this well' (Wierzbicka 1992b; Goddard 1998a:176; Schourup 2001).

As for interjections, Ameka (1992) identifies "cognitive interjections" as one of three broad semantic categories, and suggests that they share a semantic component 'I think something now' and/or 'I know something now', e.g. English *Ah-ha!, Oh-oh! Gee! Wow! Mhm.* Ameka's other categories – volitive and emotive – are based on I WANT and I FEEL, respectively.

5. Different ethnotheories of the person, and associated phraseology

A third dimension of cross-linguistic variation in ways of talking about thinking (and thinking about thinking) concerns different ethnotheories of the person. In all languages the existence of the semantic prime BODY "invites" people to theorise about the "other parts" of a person, i.e. about the non-bodily aspects of the person (cf. Wierzbicka 1992a, Matisoff 1986, Enfield and Wierzbicka 2002), and the semantics of these concepts (sometimes called 'psycho-collocations' or 'PSI-words') often involve THINK, as well as FEEL, KNOW and other elements. Some examples are given in Table 2. Often the words used for these non-physical aspects of a person are recruited from the bodily domain, as in the right-hand column of Table 2, but this is often best analysed as polysemy.

Table 2. *Key ethnopsychological constructs in several languages*

English:	*mind, spirit, soul*	*head*, *heart*
Russian:	*duša* ('soul')	*serce* 'heart'
Yankunytjatjara:	*kurunpa* 'spirit'	*pina* 'mind (=ear)'
		ngalya 'mind's eye (=forehead)'
Malay:	*jiwa* 'soul, life'	*hati* 'heart (=liver)'
	roh 'spirit, soul'	
East Cree:	*ahchaahkw* 'soul, spirit'	*mitehii* 'heart'
	mituneyihchikan 'mind'	
	mistaapeu 'personal power spirit'	
Amharic:	*hïllina* 'mind'	*hod* 'mind (=stomach)'
	nəfs 'soul, spirit'	
Tagalog	*malay* 'consciousness'	
	kakambal 'soul double'	
	kalooban 'inner being'	
	kaisipan 'mind'	

Sources: Wierzbicka 1992a; Goddard 1996; Junker, Amberber, Palmer, this issue

Russian *duša*, variously rendered in English as 'soul', 'heart' and 'spirit', is a much broader concept. It is one of the leitmotifs of Russian literature and of everyday Russian conversation. Whereas *mind* is linked with rational functions, *duša* is linked, above all, with feelings, and especially those with a certain profundity or spiritual quality: the *duša* endows a person with moral capabilities. The *duša*, furthermore, is viewed as a kind of internal spiritual theatre – a place where events happen which are in principle unknowable to outsiders. But though as the proverb says, *čužaja duša poteᴍki* 'another person's *duša* is unfathomable', in Russian culture readiness to open and to "pour out" one's *duša* is seen as important and good. Cognitive functions are not altogether excluded: one can know or say things *v duše* 'in one's heart' so long as these things are linked with values and feelings. Also included in the domain of the *duša* is the human will, as can be seen in the expression *duševnaja sila* 'spiritual strength, strength of character'. These and other considerations suggest a semantic structure as in (20).

(19)   *mind* (English) =
       one of two parts of a person
       people cannot see it, people cannot touch it
       because of this part, a person can think
       because of this part, a person can know things

(20)   *duša* (Russian) =
       one of two parts of a person
       people cannot see it, people cannot touch it
       because of this part, people are not like other living things
       because of this part, many things can happen inside a person
       these things can be good, these things can be bad
       because of this part, a person can feel many things
       other people can't know what these things are if the person doesn't want
            them to know it
       it is good if a person wants other people to know it
       because of this part, a person can be a good person

A complex ethnopsychological concept like *mind* or *duša* embodies an "ethnotheory of the person". Both ethnotheories are basically dualistic, but whereas the Russian lexicon opposes the body to a psychological entity which is unpredictable, emotional, spiritual, expressive and moral, in English the basic dualism is focused on intellectual and rational aspects.

It is useful to view a third explication, this time from Malay (Goddard 2001b). Unlike *mind* and *duša*, the word *hati* retains a link with a body part (in this case, the liver). According to (21), the *hati* concept is very "feeling-oriented", but focused primarily on interpersonal feelings. As with Russian *duša*, the *hati* is viewed as an inner domain of experience, but there is a heightened emphasis on its motivational consequences, along with a certain moral ambivalence. On account of the *hati*, a person may have an urge to do bad things as much as good things (hence one ought not unthinkingly or impulsively follow one's *hati*; as the saying goes, *ikut hati mati* 'follow the hati, die'). From a phenomenological point of view, *hati* also differs from the English and Russian concepts in having a quasi-autonomous "expressive" aspect. In numerous Malay collocations the *hati* speaks, whispers, asks, grumbles, etc. and otherwise prompts the experiencer. As with the Russian concept of *duša*, the *hati* is regarded as private and inaccessible, but, unlike as in Russian, there is no priority placed on expressing or communicating the *isi hati* 'contents of the hati' to other people.

(21)   *hati* (Malay) =
       a part of a person
       people think it is like a part of a person's body
          (a big part inside the middle of the body)
       when a person thinks about someone else for some time,
            something can happen in this part
       when this happens, this person feels something because of it
            sometimes something good, sometimes something bad
       because of this, this person wants to do something
            sometimes something good, sometimes something bad
       when something happens in this part of a person, sometimes this person can think
       like this about it:
            something inside me is saying something to me
       other people can't know what happens in this part of a person,
       if this person doesn't want them to know

Culture-specific ethnotheories have implications for the phraseology of a language, because they may motivate figurative (or quasi-figurative) expressions involving THINK. To get this in perspective, it is helpful to draw a comparison with the language of emotion (feelings linked with thoughts), which, as previously mentioned, has been studied more intensively than the language of thinking *per se*. I have in mind Wierzbicka's (1999: 294-302)

proposals, subsequently tested by Amberber (2001) and Ye (2002), that one can distinguish three modes of body-related reference to emotions: (i) reference to external bodily symptoms ('people can see ...'), e.g. *trembling*, *sweating*, (ii) sensation expressions ('this person feels...') e.g. *burning*, *chill*, (iii) 'internal bodily images', e.g. *heart-broken*. In relation to THINKING, it seems that expressions of type (iii) are much more common cross-linguistically than the others, and that by definition these involve "PSI-words", since they involve bodily images rather than literal descriptions. In some languages, phrasemes or secondary lexemes involving ethnopsychological constructs are extremely numerous, far outnumbering primary lexemes in the same domain. In Southeast Asia this is an areal feature (Matisoff 1986). Thai and Malay, for example, which are genetically unrelated languages, each have scores of expressions based around Thai *cay* 'heart, mind, disposition' and Malay *hati*, respectively (Diller and Juntanamalaga 1990, Goddard 2001b).

6. Morphosyntactic elaboration of the cognitive domain

It seems abundantly clear that languages may differ in the extent to which semantic components involving THINK are encoded by morphosyntactic means, and in the type of morphosyntactic categories involved. The following examples are intended to be suggestive of the range of variation, but are not exhaustive. Morphosyntactic encoding is the fourth dimension of cross-linguistic variation.

6.1. Constructions indicating spontaneous, or uncontrolled thinking

Constructions indicating that a thought is spontaneous or uncontrolled appear in a variety of unrelated languages. English has impersonal constructions such as 'it crossed my mind that ...', 'it strikes me that ...', 'it occurred to me that ...'. Russian has a veritable plethora of impersonal and dative-subject constructions of depicting spontaneous mental activity (Wierzbicka 1992a: 398-408). The following examples are from Malay, where prefix *ter-* can, among other functions, indicate momentaneous thought (Goddard 2001c).

(22)   a.   someone (X) *ter*-fikir: [$--$]$_S$ =
             at that moment X thought: [$--$]$_S$

       b.   *Tuk   terfikir,   Nit sampai hati.*
             Tuk   TER:think   Nit reach   heart
             'It struck Tuk that Nit had gone too far (this time).'

(23)   a.   someone (X) *ter*-fikir tentang Y   =
             at that moment X thought about Y

       b.   *Kami belum   terfikir   tentang perkara itu.*
             we not.yet   TER:think   about   issue   that
             'We haven't yet thought about that issue (i.e. getting married).' ("we haven't given it a moment's thought").

6.2. "Experiencer" constructions with mental verbs

In many languages, there are experiencer constructions which allow different perspectives on mental events, especially, it seems, those involving amalgams of thinking, feeling and wanting. For example, Polish has an "active experiencer" construction with reflexive particle *sie4* (cf. Wierzbicka 1988). This depicts a feeling state as due to sustained thinking.

(24) a. X felt something for some time
because X was thinking about something for some time

b. *Adam   cieszył   sie4 (martwi¬   się ,*
Adam   rejoice:PAST:IMPF:3SG   REFL worry:PAST:IMPF:3SG   REFL
smuci¬   się).
be.sad: PAST:IMPF:3SG   REFL
'Adam rejoiced (worried, was sad).'

As another example, Ewe has several experiencer constructions. In one of these, the "stimulus" appears as grammatical subject with the experiencer as object of preposition *ná* 'to' (Ameka 1990). The meaning is that a feeling was induced by a thought, but not because the experiencer wanted it.

(25) a. X felt something
because X thought something about S ("stimulus")
not because X wanted to feel this

b. *É-dzə   dzi   ná m.*
3SG-straighten   heart   to 1SG
'It pleased me.'

6.3. THINK *encoded into other morphosyntactic categories*

Semantic components involving THINK may sometimes be encoded in the suite of overlapping and ill-defined categories which include evidentiality (cf. Chafe and Nichols 1986, Aikhenvald 2002), epistemic modality (cf. Palmer 1986, Nuyts 2001), and less standard categories such as: mirative, mediative, indirective, presumptive, and speculative (DeLancey 1997, Lazard 1999, Johanson and Utas 2000).

Evidentiality is normally characterised as a set of categories which indicate the speaker's "source of information" or "the nature of the evidence" for the speaker's belief. Many evidential categories do not involve THINK, such as visual, auditory, and "hearsay" categories (based on SEE, HEAR, and SAY, respectively), and many so-called "inferential" evidentials seem to be concerned with indicating that new knowledge is based on other or prior knowledge, e.g. 'I know this now because I know something else'. But when an evidential category is said to indicate "conjecture", "speculation", or the like, one may well conclude that the component I THINK is involved. For example, Adelaar (1977, quoted Weber 1986: 138) describes Tarma Quechua *-chi* as indicating "conjecture", Barnes (1984:264-5) translates Tuyuca *-hiỹi* as "assumed" ("it is reasonable to assume"), Levinsohn (1975:14-15, quoted in Palmer 1986:52) describes the Inga particles *cha* and *sica*, as "deduced by the speaker as having probably occurred" and "speculated as possible by the speaker", respectively. In some cases, an analysis which contrasts THINK with KNOW may be appropriate. For example, in her semantic exploration of evidential categories, Wierzbicka (1996: Ch 13) proposes the component 'I think this, I don't say: I know it' for the Tibetan "gnomic" (cf. Woodbury 1986: 190-197).

Epistemic modality is typically characterised as concerning the "degree of speaker commitment to truth" (Palmer 1986, Nuyts 2001), but it is debatable whether such categories necessarily contain any specification about 'truth', in the literal sense. More often what seems to be at issue is rather knowing, and sometimes perhaps, the contrast between KNOW and THINK. For example, the English sentences *He must be home because the lights are on* and *He*

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could be home because the lights are on both display epistemic uses of modal verbs. In both cases, the subordinate clause provides a reason for the speaker's conclusion, but how can one represent the different status of the two conclusions? Perhaps as follows: 'I have to (= can't not) think he is at home' vs. 'I can think he is at home'.

The other categories mentioned above – mirative (sometimes called admirative), mediative, indirective, presumptive, speculative – are less standardised in general descriptive linguistics. DeLancey (1997) proposed mirativity as a natural semantic category based on unexpectedness, surprise, novelty of information, the speaker's unprepared state of mind, etc. He claimed that it was grammaticised in Turkish, among other languages. The notion of mirativity can presumably be resolved into simpler terms involving THINK, e.g. 'I didn't think this would happen'. DeLancey's proposal, however, has been strongly contested by Lazard (1999) and Johanson (2000) who argue that the relevant grammatical category in Turkish (and other Turkic languages) is a much broader one of "indirective" or "mediative", with mirative being merely a context-based interpretation, along with hearsay and inferential interpretations. As far as I can see, the proposed indirective or mediative category is not tied in any particular way to THINKING, as such. On the other hand, some Iranian languages have been reported (Perry 2000) to grammaticise "epistemic nuances" which are labelled as "inferential", "presumptive", or "speculative". Perry likens their meanings to those of the English verbs 'infer', 'presume' and 'guess', and, if valid, this would imply grammaticisation of meanings involving THINK.

Reviewing these contesting interpretations in works by DeLancey, Lazard, Johanson, and Perry (just mentioned), makes one acutely aware of the potential for confusion and misunderstanding which can result from relying on complex, obscure and abstract terminology, e.g. descriptions of indirectivity/meditativity as designating "the presentation of a situation by reference to its reception by a conscious subject" (Johanson 2000: 61). In my view, the debate would be advanced by an attempt to re-cast or decode the insights behind such descriptions into the clearer and more concrete metalanguage of semantic primes.

6.4. Purposive and apprehensional clauses

Among subordinate clause types, it appears that THINK is commonly grammaticised, along with WANT and BECAUSE, in the so-called "purposive clause". As Wierzbicka (2002b: 288-9) points out, a sentence like *The man went to the river to bathe* implies that the man "is doing something (walking towards the river), so to speak, with an intention in his head: and an 'intention' implies a thought and a want". Roughly:

(26)   The man went to the river to bathe =
        the man went to the river
        because he thought like this:
             I want to bathe; when I am at the river, I can do it

She speculates that although the "purposive scenario" implied by this line of explication is a semantically complex configuration, it may be very widely, or perhaps even universally, grammaticalised, on account of the importance of goal-directed action in human life.

"Apprehensional" clauses or "lest-clauses", in languages which have them, can be regarded as a kind of semantic inverse to purposive clauses; as for example, in a sentence like 'I hid behind the rock, lest the man see me'. See Lichtenberk (1995) for a cross-linguistic review and a detailed treatment of To'aba'ita (Solomon Islands).

It is notable that the combination of THINK with WANT, DO and BECAUSE in purposive clauses is so widespread, in view of the fact that in main clauses the grammatical encoding of THINK tends to be sporadic and "scattered" (Aikhenvald 2002), rather than forming a broad

and coherent grammatical system. This is especially noticeable in comparison with the universal or near-universal grammaticisation of KNOW, WANT and FEEL into sentence types – declaratives and questions, imperatives, and exclamatory sentence types, respectively, cf. Wierzbicka (2002b: 281-5). One can speculate that this phenomenon is linked somehow to the fleeting, inaccessable and subjective nature of thinking, as compared with other basic mental states and processes linked with other comparable primes. ('Knowing' has a long-term public character, i.e. something objective about it. 'Wanting' often translates into action. As for 'feeling', one can often see evidence of feelings in people's faces or gestures; plus, feelings often have motivational and behavioural consequences.) It as if what a person thinks only gains functional importance when it is combined with knowing, wanting, or feeling.

7. 'Cultural scripts' for different 'ways of thinking' (and associated ways of speaking)

One of the oldest insights of contrastive language and culture studies – but at the same time, one of the most controversial – is that different cultures encourage different cognitive styles, i.e. different "ways of thinking" (cf. Whorf 1938, Hymes 1961). For example, modern Anglo culture can be characterised as more rationalistic (more "thinking-oriented", more "logical") than many, if not most, other cultures of the world. More specifically, different cultures may endorse particular cognitive strategies for personal interaction, for coping with life's troubles, etc., linked with cultural values. This is a fifth dimension of cross-linguistic, and cross-cultural, variation.

Unfortunately, discussions of these topics have always been plagued by methodological difficulties with how to state and, more importantly, how to justify, specific proposals. The recent "crisis of confidence" in anthropology about the validity of the "culture concept" has further complicated the debate. It is virtually impossible to review these issues succinctly and I will not attempt to do so. Instead, I will illustrate how different ways of thinking can be characterised using the "cultural scripts" approach. This is an approach to cultural description which uses lexical and conceptual universals as its medium of cultural notation, with the goal of reducing terminological ethnocentrism and enabling a close integration of cultural and linguistic description (Wierzbicka 1994a, 1994b, 1999: Ch 7), Goddard and Wierzbicka (1997), Goddard (1997, 2000).

It can be argued, for example, that modern Anglo-American culture encourages a portfolio of interrelated attitudes which can be described in informal terms as "positive thinking", a "can do attitude", and as placing a high value on "self-esteem". In the metalanguage of semantic primes, these notions can be spelt out as in (27).

(27)   *Some partial Anglo-American cultural scripts for thinking*
      a. it is good if I often think that something good will happen
      b. it is good if I often think "if I want to do something, I can do it"
      c. it is good if I can think many good things about me

As another example, traditional Chinese culture endorsed a set of attitudes sometimes referred to as the "Philosophy of the Middle Way", which in part can be spelt out as in (28) (cf. Wierzbicka 2001:49). This script encourages something like an acceptance of change in life, and an emotional detachment from the events of the moment.

(28) *A partial Chinese script for thinking in line with the Philosophy of the Middle Way*
when something very bad happens to me, it is good if I think like this:
    something good can happen to me because of this
if I think like this, I will not feel something very bad at that time
...
when something very good happens to me, it is good if I think like this:
    something bad can happen to me because of this
if I think like this, I will not feel something very good at that time

The scripts above concern what one might call "culturally endorsed attitudes". Scripts of a different kind may embody different cultural stances about the expression of one's thoughts. For example, scripts (29) and (30) portray, in part, contrasting Anglo and Japanese attitudes about "saying what one thinks". Essentially, the Anglo speech culture encourages relatively free expression of personal views (at least, about things, if not about individual people), whereas Japanese culture traditionally values a more "guarded" stance.

(29) *Some Anglo scripts for being able to say what you think:*
a. when someone thinks something about something,
    this person can say things like this about it:
        'I think like this', 'I don't think like this'

b. no one can say to another person something like this:
    "you have to think like this
    because I want you to think like this"

c. no one can say to another person something like this:
    "you can't think like this
    because I don't want you to think like this"

(30) *Japanese script inhibiting people from saying all that one thinks:*
before I say something to someone
it is good to think like this:
    I can't say all that I think
    if I do, someone could feel something bad

Wierzbicka (2002a) makes the point that "from a cross-cultural perspective it is striking to what extent facts tend to be distinguished from opinions in modern English". She traces this cultural ideology back to John Locke and the empiricist tradition, which holds, on the one hand, that opinion grounded in rational thinking is valuable and that everyone has the right to express their opinion, but, on the other hand, insists that opinions should not be held out to be "more" than just that: opinions. They should not be presented as knowledge.

(31) *Anglo "I think" vs. "I know" script*
when I want to say something about something
it is good to think like this:
    if I don't know something I can't say that I know it
    if I think something about something,
    I can say that I think like this, I can't say that I know it

8. Different discourse patterns

Given different cultural scripts, different ethnotheories of the person, different sets of epistemic verbs and qualifiers, different degrees and modes of grammaticalisation, etc., it is not surprising that in normal discourse the range of use of the basic THINK verb differs greatly from language to language. Variation in discourse patterning constitutes the sixth and final dimension of variation to be considered in this study.

As with many areas of typological semantics, contrastive study of this area has scarcely begun, so to give flesh to this observation we probably cannot do better than to look closely at the English language. Certainly it is a striking fact that the verb *think*, and in particular the collocation *I think*, has a very high frequency in English, even compared with other European languages, let alone with many indigenous languages from around the world (cf. Wierzbicka 1998). For example, according to figures in Aijmer (1997), the expression *I think* appears in the London-Lund Corpus of English (of about half a million words) at at rate of about 35 occurrences per 10,000 words. In the comparable database of spoken Swedish the figure for the closest Swedish counterpart *jag tror* (or *tror jag*) 'I believe' is 2.6 occurrences per 10,000 words (Wierzbicka 2002a). In a Dutch database (Simon-Vandeberger 1998: 311), the figure for *ik denk* is 9 per 10,000 words.

A number of scholars (e.g. Aijmer 1997, Kärrkäinen 1998, Scheibman 2001) have observed that English *I think* serves a range of conventionalised conversational and illocutionary functions, e.g. to make suggestions or to mitigate disagreement, not found in many other languages. Perhaps this is not surprising in view of the cultural scripts proposed in the previous section.

It has also been observed that English *think* occurs in two different constructions, depending on whether or not a complementiser is present. On a range of evidence, Thompson and Mulac (1991) argue that when the "complement" lacks the introductory *that*, it is often not a true or full complement from a semantic or syntactic point of view. Rather, *I think* is functioning roughly as an epistemic adverb with respect to a single clause, indicating something like tentativeness. Interestingly, the 'I think ø' construction is overwhelmingly more frequent (accounting for 93% of their conversational data) than 'I think that'. Can one then identify a semantic difference between the two constructions? Aijmer (1997: 21) describes the tentative 'I think ø' in terms of a "softening" effect: "the tentative *I think* expresses uncertainty (epistemic modality) or softens an assertion which may be too blunt (interactive meaning)". Wierzbicka (2002a) suggests that both these functions have their basis in a semantic component which she formulates as follows: 'I say I think this, I don't say more'.

In a plain declarative sentence, this component interacts with – or rather, cancels out – the core illocutionary component of a declarative sentence, namely, 'I know this'. Thus, on Wierzbicka's analysis, a declarative prefaced by the "epistemic qualifier" *I think* has the kind of semantic structure shown in (32a), in contradistinction to a plain declarative as in (32b). That is, the speaker is in a sense disclaiming knowledge – not by saying "I don't know" but by saying "I don't say: I know".

(32)　a.　I think Bill wrote it =
　　　　　　 I say: I think that Bill wrote it
　　　　　　 I don't say more
　　　　　　 I don't say: I know this

　　　　 b.　Bill wrote it =
　　　　　　 I say: Bill wrote it
　　　　　　 I know this

The effect is different in modally qualified or exclamatory (emotive) sentences, such as *I think we should go* or *I think this is awful*. Here the component 'I say I think this, I don't say more' implies that what I say is my personal opinion which doesn't have to be shared by others. The effect is "interactive", in Aijmer's terms. For example:

(33)   I think we should go =
        I say: I think that we should go
        I say I think this, I don't say more

Wierzbicka (2002a) does not hesitate to propose that the function and high frequency of *I think* are linked with the cultural importance in the modern Anglo world with distinguishing between what 'I think' and what 'I know'. The basic point is that culturally-based routinisation creates distinctive patterns of usage.

9. Concluding remarks

This study began with the proposition that THINK is a universal semantic prime, and it therefore provides a stable reference point for cross-linguistic comparison (along with other distinct but related semantic primes such as KNOW, WANT, FEEL and SAY). Casting the discussion in terms of THINK allows an orderly and explanatory treatment free from the obscurity and terminological ethnocentrism of complex terms such as 'cognitive activity', 'mental state', 'prehension', etc.

Despite its theoretical and methodological importance, however, the shared presence of the semantic prime THINK seems a very small thing when seen against the backdrop of cross-linguistic variability which has been surveyed in the main body of the paper. Starting with the lexeme for 'think' itself, then moving outward in ever-expanding circles, so to speak, six different dimensions of variability have been canvassed: different patterns of lexical polysemy, different degrees and modes of lexical elaboration (epistemic verbs, words for attitudes, emotions and moods, epistemic particles, qualifiers and interjections), different ethnotheories of the person (which accord differing roles to thinking in relation to other mental processes and states), different ways in which think-related meanings can be encoded morphosyntactically, different cultural scripts which may encourage or discourage particular ways of thinking, and as a consequence of all this, differing patterns of usage in discourse.

One important aspect which has not been explored at any length in the present study, but is nonetheless implicit from the examples provided, is that there is usually considerable language-internal coherence in the way in which THINK manifests itself across lexicon, grammar, and discourse. In any particular language, that is, one might expect to find recurring patterns or themes, comparable to Whorf's (1956) notion of "fashions of speaking". This raises the possibility that a more comprehensive and detailed analysis across a variety of diverse languages would enable one to develop a typology of "cognitive styles" or "ways of thinking".

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Notes

[1] A comprehensive bibliography is available at the following URL: http://www.une.edu.au/arts/LCL/disciplines/ linguistics/nsmpage.htm.

[2] A lexical unit (Cruse 1986: 77-78, cf. Mel'čuk 1989) is the pairing of a single specifiable sense with a lexical form. It is not to be identified either with 'lexeme' (a family of lexical units) or with 'lexical form' (a family of word forms which differ only in respect of inflection). When we seek to match exponents of semantic primes across languages, what we are seeking to do is to align lexical units (across languages) which share a given putatively primitive meaning.

[3] Languages occasionally exhibit "allolexy", such that THINK is expressed by different lexical material in different grammatical contexts. For example, in the polysynthetic Australian language Bunuba (Knight forthcoming), the basic exponent of THINK is the verb *ma (gun.gulu)* (cf. section 3.1), but in the 'think about' frame it is expressed by the formally unrelated expression *linga ra* (consisting of coverb *linga* and auxiliary verb *ra*).

[4] English *think* that can even occur in the progressive aspect. Persson (1993:4) gives the following textual example: 'Mike turned away. He was thinking that the way she had responded to his kiss hadn't meant what he believed it had'.

[5] The following symbols are used in interlinear glosses: PRES present tense, ERG ergative case, IMPF imperfective, NOML nominalisation, LOC locative case, S intransitive subject, PAST past tense, I/I interrogative/indefinite, INF infinitive, INS insert, OBL oblique, NONFUTURE nonfuture tense, DEF definite, PRO core pronoun, SG singular, PL plural.

[6] Though I am identifying the expression under discussion as *to believe that*, it remains true that complementiser *that* is subject to conversational deletion, in the same fashion as complementiser *that* with *say*, *think*, *know* and other verbs. Nonetheless, *to believe that* still makes sense as a convenient citation form because the expression in question allows complementiser *that* whereas the epistemic qualifier *I believe* does not.

[7] Wierzbicka (to appear) argues *to believe someone*, i.e. to believe what someone says, requires a further, distinct but related meaning involving semantic prime TRUE, and that the expression *to believe in* someone or something manifests still further polysemic meanings either involving TRUE or GOOD. Overall, these multiple senses of *believe* constitute a formidible polysemic cluster.

[8] As expected, Swedish *tänka* THINK also occurs in the other syntactic frames listed in (1): *tänka på Y* 'think about Y', *tänka någonting om Y* 'think something about Y', *tänka såhär* 'think like this'. It also occurs in sundry derived and compound terms which seem indifferent to any putative dichotomy between process and state; e.g. *tanke* 'thought', *tankfull* 'thoughtful', *tänkbar* 'thinkable', *tänkesätt* 'way of thinking', *tänkare* 'thinker', *misstänka* 'suspect(v)', *tankspridd* 'distracted, absentminded', *tänkvärd* 'remarkable, worth thinking about', and many others. Aside from its greater semantic simplicity, *tänka* THINK outstrips *tro* and *tycka* in terms of morphological and phraseological productivity. Across a range of criteria *tänka* is clearly the most "basic" verb in the Swedish lexicon of cognition.

[9] Admittedly, the distinction between pragmatic implication and semantic encoding is not accepted by all linguists, and even those who do accept it may disagree about criteria for operationalising the distinction. It should be clear, however, that the mere existence of distributional differences is not sufficient to jump to the conclusion that Swedish and English "carve up the semantic space of thinking differently" (Burling 1984). The issues involved are more subtle than that.