Małgorzata Studencka-Pufal

SEVERAL ISSUES CONCERNING VERBS OF THINKING

1. GENERAL ASPECTS

The ability to think is a unique human feature and there is no exaggeration in claiming that this ability is essential to human existence. Thinking is the basis of, and an indispensable part of every higher form of man´s activity; but, paradoxically, the process of thinking still remains unrecognized and unrecognizable. According to the famous Gödel theorem the full definition of thinking is impossible, because we can only think about thinking. Nevertheless we will take up this challenge and try to discover the ways of human thought.

In this paper we will say a few words concerning some problems connected with our work on the semantic field of verbs of thinking and with making dictionary entries describing these verbs. This work is a part of a lexicographic project called Łódź English-Polish and Polish-English Dictionary of Verbal Concepts (BIT) [L e w a n d o w s k a-T o m a s z c z y k   this volume].

The "omnipresence" and fundamental character of thinking makes any attempt to define the range and inner structure of the field of verbs denoting intellectual processes a very difficult task. The borderlines of the domain are blurred and the field overlaps with other fields like verbs of emotions or communication, to mention just some of the most important ones. To solve the problem of including or excluding some "border" words we have consulted many dictionary definitions, but first of all we have based our decisions on the opinion and intuitive categorization of native speakers of English.

We have resolved that the main semantic component of verbs of thinking is the processing of data in the human mind. Thus, for example, we have decided that the verb *expect* does not belong to the field, as the prevailing component of its meaning is feeling rather than reasoning. On the other Hand the verb *anticipate* remains in the domain. We have excluded verbs such as *browse* and *skim* which S n e l l-H o r n b y [1983] classifies in the subfield of human mental activity headed "Thinking, Reading", as we treat all verbs of reading as a separate field describing the process of collecting data rather than processing it (*study* is a border word of our domain). For a similar reason we have reserved for "verbs of memory" items such as *remember, memorize,* an area out of the domain, as verbs dealing with storage of information. We include the word *recall* as lying on the very edge of the field.

Contrary'to the authors of Word-Net [F e l l b a u m et al. 1990] we have taken into consideration verbs of mental creation, like for instance *plan,* to emphasize the more specific component of thinking rather than the more generic one of creating.

Having established, somehow arbitrarily, the borderlines of the field we had even more difficulties concerning the making of dictionary entries. We will discuss some of them and then present a few examples of the head words from our field.

Besides troubles familiar to each lexicographer, such as the proper organization of an entry, the precision of a definition and clarity of grammatical patterns we have had to overcome some interesting problems connected with the most innovative part of our dictionary, that is a conceptual analysis. This analysis aims at "discovering and organizing the semantio components of the words" [N i d a 1975], thus introducing it to the dictionary entry makes the description of a verb more systematic and compact. Our analysis is partially based on the universal case grammar of F i l l-n o r e [1968] and the cognitive theory of categorization. The set of semantic features used comprises such notions as:
- Superordinate Categories
- Participants (Agent/Experiencer, Object, Path)
- Circumstantial Properties (Base, Manner, Effect, Contact)
- Speaker's Evaluation
- Subordinate Categories.

The first step in the analysis has been already made by prescribing Superordinate Category THINK to all verbs classified to the field. The next one has been to discover the subtle and complicated hierarchy of the field by finding out other superordinate categories, that is more generic terms, of each verb. Some verbs have in their meaning more than one superordinate component, for example *meditate* may imply such a deep consideration of a plan or project that it approaches *intend* in its meaning. We have coded this information by introducing a Superordinate Category THINK+INTEND for the head word *meditate$_2$*. In the case of *puzzle* which can mean "to make someone feel helpless and uncertain in the effort to explain or understand something" (OALDoCE) the process of thinking is followed by the feeling of confusion, so the Superordinate Category of *puzzle$_1$* is THINK→BE CONFUSED, where an arrow indicates the temporal relationship between the terms.

For all verbs from the field Agent and Experiencer of the action is always described as (+human), as we assume that only human beings can think or can be made to think. Object is the issue which the Agent is thinking about or which makes the Experiencer think; it is usually defined as (+abstract) and some more specific information is added. Thus in the head word *speculate^1* we have: Object: +abstract, 1+

　　　　　typ. possibilities,

which means that while speculating we think about more than one thing, usually various possibilities.

The Path describes the abstract path along which our mind wanders in search of a solution. Thus, when we *reason,* our thoughts run along one straight path, when we *meditate* we think along more than one path, but all of them lead directly to the object of meditation, when something puzzles us *(puzzle$_2$)* we know that there are paths leading to the solution but we are unable to find them.

The Base of thinking is the information, facts or assumptions which we are taking into consideration in the process of thinking. According to the rules of logic the Base is relevant for verbs denoting only these types of thinking in which certain solution is aimed at (the feature Effect is not neglected).

Another point in the entry causing much troubles has been the Polish equivalents of English verbs. English has a great variety

of verbs describing the subtleties of thinking, which in Polish
can be reflected by the use of modifying adjectives. Sometimes it
happens that there exists an equivalent very close in its descrip-
tive meaning, but completely different in usage, for instance *rumi-
nate* is used in formal style and its equivalent *przeżuwać* is used
in common language. Another example of differences between Polish
and English domains is *infer*₁ \ for which the best Polish transla-
tion is *wnosić* belonging to the Polish field of thinking only as
a metaphorical extension of the verb of movement.

     As far as the grammatical codes are concerned we have decided
to make them as simple as possible and very closely connected
with the examples of sentences. The main syntactic information
about the verb is included in point "C". We have used the fol-
lowing notation:
     - VT - verb transitive
     - VI - verb intransitive
     - PhV - phrasal verb
     - ( ) - option
     - [ ] - obligation
     In part "D" of the entry each English example of the sentence
is preceded by more detailed syntactic patterns where:
     - S - subject
     - A - adjunct
     - AP - adverbial phrase
     - prep - preposition
     - RC - report clause
     - wh-C - wh-clause
     We would like very much to follow the advice of A t k i n s,
K e g l and L e v i n [1988] in systematic presentation of the
relationships in the semantics and syntax of the English verb, but
we find it impossible because of the lack of a sufficient corpus.
In the case when a particular verb has more than one meaning we
used indexes in subscript if all different meanings belong to our
semantic field, and superscript if they belong to other domains.

     This short description of our problems does not exhaust a list
of all controversial issues in our work. Nor are our proposals to
be treated as decisive and unquestionable. The work is still in
progress, new problems are arising and we are searching for new
better solutions.

2. EXEMPLIFICATION

In this section we will present a few verbs from the field to show some particular problems which we met in the attempt to analyze them. A short and systematic description restricted only to a small set of semantic features has turned out to be difficult, but a most effective and clear means of characterizing the verbs.

1. A. SPECULATE[1]
   B. Superordinate Categories: THINK ABOUT, REASON
      Participants
      Agent: + human
      Object: + abstract, 1+, typ. possibilities
      Path: 1+
      Circumstantial Properties
      Base: insufficient
      Effect: 1+ solution
      Manner: analytical
      Speaker's Evaluation: 0 (-)
      Subordinate Categories:
      - Polish Definition: rozważać wiele możliwości, różnorodnych logicznych rozwiązań, dysponując wiedzą i dowodami niewystarczającymi dla osiągnięcia jednego, pewnego rozwiązania
      Polish Equivalents: spekulować (na temat), sądzić (o), snuć domysły
   C. Syntax
      VI [(about, on)]
   D. Examples
      S + VI
      S + VI + A
      We don't know all the circumstances so it would be pointless to speculate (on what happened).
      Nie znamy wszystkich okoliczności, a więc nie ma sensu spekulować na temat tego, co się wydarzyło.
      At present scientists can only speculate on the nature and extend of life outside our solar system.
      Obecnie naukowcy mogą jedynie spekulować na temat natury i zasięgu życia poza granicami naszego układu słonecznego.
      S + VI + RC
      The police are speculating that this incident may be linked to a similar attack two weeks ago.

Policja sądzi, że ten incydent może mieć związek z podobnym
napadem sprzed dwóch tygodni.
Do not speculate on what he would have done had he lived.
Nie snuj domysłów co on by zrobił, gdyby żył.

E. Usage: common language

Speculate is one of the verbs which requires the full set of the
features. We have resolved that the most relevant in speculating
are: a systematic and logical way of thinking and lack of necessa-
ry background knowledge. Thus we have chosen as the Superordinate
Category REASON, which, together with the "analytical" Manner,
stresses the logicality of thinking and we have described the Base
of thinking as "insufficient". The information about more than
one (1+) solution achieved in the process of speculating empha-
sizes the uncertainty of the Effect. The value 1+ ascribed to
the Path means that while speculating we search for the solution in
many different ways. The conceptual analysis of *speculate* has made
us also reject the most common Polish translation of *speculate* that
is *zgadywać* [S t a n i s ł a w s k i, F i s i a k], as this
equivalent completely lacks the analyticality implied by the
English verb.

2. A. MEDITATE$_1$
   B. Superordinate Categories: THINK, CONSIDER, PONDER
      Participants
      Agent: + human
      Object: + abstract, 1 (religious)
      Path: 1 + direct
      Circumstantial Properties
      Base: -
      Effect: understanding
      Manner: concentrated, with effort
      Speaker's Evaluation: 0
      Subordinate Categories: -
      Polish Definition: skupiać myśli, kierować je ku jednemu
      obiektowi rozważań, który bardzo często związany jest ze
      sprawami wiary
      Polish Equivalents: medytować, rozmyślać, rozważać
   C. Syntax
      VI [(on, upon)]

D. Examples

S + VI

The old man lay on his back and meditated.

Starzec leżał na plecach i medytował.

S + VI + A

Meditate upon these things, give thyself wholly to them

Rozważ te sprawy, oddaj się im całkowicie.

He sat there meditating upon his misfortunes.

Siedział tam rozmyślając o swoich niepowodzeniach.

E. Usage: common language

A. MEDITATE$_2$

B. Superordinate Categories: THINK+INTEND

Participants

Agent: + human

Object: + abstract, typ. plan, project

Path: 1 + direct

Circumstantial Properties

Effect: decision

Speaker's Evaluation: 0

Subordinate Categories: -

Polish Definition: rozważać realizację planu lub projektu, skupiać na nim myśli

Polish Equivalents: rozważać, myśleć (o)

C. Syntax

VT

D. Examples

S + VT + O

Are you really serious in meditating a dance in Netherfield?

Ty rzeczywiście poważnie myślisz o tańcu w Netherfield?

S + VT + .ing

I hear you are meditating giving up your job.

Słyszałem, że zamierzasz rzucić pracę.

E. Usage: common language

Meditate is a very good example of a verb changing its meaning with the change of its grammatical category. The transitive and intransitive uses of the verb share the meaning of a definite directing or focusing of one's thoughts, but an intransitive use "suggests the effort to understand the thing" [W e b s t e r

1983], while a transitive one has the clear component of purpose
which, as we have already mentioned, has been coded as THINK+INTEND
in the Superordinate Category.

3. A. INFER₁

   B. Superordinate Categories: THINK, CONCLUDE
      Participants
      Agent: + human
      Object: + abstract,
      Path: 1 continuous
      Circumstantial Properties
      Base: known or assumed
      Effect: 1 inevitable solution
      Manner: logical
      Speakér´s Evaluation: 0
      Subordinate Categories: DEDUCE, INDUCE
      Polish Definition: dochodzić do konkluzji na podstawie zna-
      nych faktów lub przyjętych założeń, rozumując według praw
      logiki
      Polish Equivalents: wnioskować, wyciągać logiczne wnioski
   C. Syntax
      VT
   D. Examples
      S + VT + O
      I see motion I infer a motor.
      Widzę ruch, wnioskuję sprawcę.
      S + VT + RC
      He can logically infer that if the battery is dead then the
      horn·will not sound.
      Mógł logicznie wnioskować, że jeśli akumulator jest wyczerpa-
      ny to sygnał dźwiękowy nie będzie działał.
   E. Usage: us. logic, scientific language

   A. INFER₂
   B. Superordinate Categories: THINK, CONCLUDE
      Participants
      Agent: + human
      Object: + abstract,
      Path: 1 non-continuous
      Circumstantial Properties

Base: known or assumed, uncertain
Effect: 1 opinion, conclusion
Speaker´s Evaluation: 0
Subordinate Categories: -
Polish Definition: dochodzić do konkluzji, przekonania, wyda-
wać opinie na podstawie najczęściej skąpych i niepewnych do-
wodów lub informacji
Polish Equivalents: wnosić, wnioskować, wyciągać wnioski

C. Syntax
   VT [from]

D. Examples
   S + VT + prep + O
   What we can infer from his refusal to see us?
   Cóż możemy wnosić z tego, że odmówił widzenia się z nami?
   Eternal historical tendencies cannot be inferred from data
   covering a mere century or so.
   Nie można na podstawie danych obejmujących zaledwie mniej
   więcej stulecie wnioskować o odwiecznych tendencjach hi-
   storycznych.
   S + VT + (prep) + RC
   I infer from your letter that you have not yet made a de-
   cision.
   Wnoszę z twojego listu, że nie podjąłeś jeszcze decyzji.

E. Usage: formal language

A. INFER$_3$
B. Superordinate Categories: THINK, CONCLUDE
   Participants
   Experiencer: + human
   Object: + abstract
   Path: 1 .
   Circumstantial Properties
   Base: known
   Effect: 1 conclusion
   Manner: logical
   Speaker´s Evaluation: 0
   Superordinate Categories: -
   Polish Definition: skłaniać do wyciągnięcia logicznych wnio-
   sków.
   Polish Equivalents: zawierać, nasuwać pojęcie, pociągać za sobą.

C. Syntax

   VT

D. Examples

   S + VT + 0

   Consider first that Great or Bright infers not Excellence.

   Rozważ wpierw, że Wielkość i Jaskrawość nie pociągają za sobą **Doskonałości.**

E. Usage: formal language

While making the entry concerning *infer* we have had to decide about the order in which the particular senses of the word would appear. The general assumption that the more current usage always precedes the rarer one has been violated this time. We think that presenting the etymologically original meaning in the first place will in this case explain more clearly also the more general meaning.

4. A. PUZZLE[1]

B. Superordinate Categories: THINK→BE CONFUSED

   Participants

   Experiencer: +human

   Object: +abstract

   Path: 1+

   lost

   Circumstantial Properties

   Effect: none

   Manner: with effort

   Speaker's Evaluation: 0

   Subordinate Categories: -

   Polish Definition: poprzez konfrontację z problemem zbyt trudnym do rozwiązania powodować uczucie zakłopotania, zagubienia

   Polish Equivalents: wprawiać w zakłopotanie

C. Syntax

   VT (often passive construction)

D. Examples

   S + VT + 0

   This letter puzzles me.

   Ten list wprawia mnie w zakłopotanie.

   He was puzzled how to answer the letter.

   Był w kłopocie, jak odpowiedzieć na ten list.

E. Usage: common language

A. PUZZLE[2]

B. Superordinate Categories: THINK

Participants

Agent: +human

Object: +abstract

Path: 1+

Circumstantial Properties

Base: scattered

Effect: none

Manner: with effort

Speaker's Evaluation: 0

Subordinate Categories: -

Polish Definition: myśleć z ogromnym wysiłkiem, próbując znaleźć odpowiedź na dręczące pytanie, rozwiązać łamigłówkę

Polish Equivalents: łamać sobie głowę, rozmyślać, dumać

C. Syntax

VI [(about, over, as to)]

D. Examples

S + VI + prep + A

I've been puzzling over all the figures, trying to find what happened to the missing money.

Łamałem sobie głowę nad tymi wszystkimi cyframi, próbując odkryć co stało się z brakującymi pieniędzmi.

E. Usage: common language

A. PUZZLE OUT

B. Superordinate Categories: THINK, SOLVE

Participants

Agent: +human

Object: +abstract

Path: 1+

Circumstantial Properties

Base: scattered

Effect: 1 solution, answer

Manner: with effort

Speaker's Evaluation: 0

Subordinate Categories: -

Polish Definition: znaleźć odpowiedź na pytanie, rozwiązać problem

Polish Equivalents: odpowiedzieć, odkryć

C. Syntax

PhV

D. Examples

   S + VT + 0 + AP

   S + VT + AP + 0

   I'm trying to puzzle out the meaning of this words.

   Staram się odkryć znaczenie jego słów.

   S + VT + wh - C

   We finally puzzled out how to open the box.

   W końcu wymyśliliśmy jak otworzyć to pudełko.

E. Usage: common language

In the analysis of *puzzle* we have decided that the component common to all senses is an attempt to form a meaningful whole from the scattered pieces of information. An intransitive use of the verb implies the feeling of confusion evoked by the complete failure in this task, which we have resolved to code by describing the Effect as "none" and Superordinate Category as THINK→BE CONFUSED to stress this secondary mental effect of the process of thinking.

5. A. REFLECT[1]

   B. Superordinate Categories: THINK, PONDER

      Participants

      Agent: +human

      Object: +abstract, +factual

      Path: (+repetitive)

      Circumstantial Properties

      Contact (A-0): prolonged

      Speaker's Evaluation: 0

      Subordinate Categories: -

      Polish Definition: rozmyślać w spokoju o wydarzeniach z przeszłości lub pewnych ideach, zwykle często wracając do nich myślą

      Polish Equivalents: rozmyślać, zastanawiać się

   C. Syntax

      VI (on, upon)

   D. S + VI

      All the most important things in his life, he sometimes reflected, had been determined by chance.

      Czasami zastanawiał się, że wszystkie najważniejsze wydarzenia w jego życiu były kwestią przypadku.

S + VI + prep + A

An old man was reflecting on the changes that had taken place in the world since his youth.

Stary człowiek rozmyślał nad zmianami jakie zaszły od czasów jego młodości.

E. Usage: common language

Reflect has required an introduction of the feature Contact (between the Agent and Object) to express denoted by the verb meaning of coming back in thoughts to the past events.

It seems that the small set of features introduced in the conceptual analysis has been so far quite sufficient to present the essential (prototypical) meaning and differentiate various senses of verbs from the semantic field of "thinking". We expect that also the set of values assigned to the features will occur to be small and homogenous thus making our description more simple. We hope that this way of presentation of verbs will give the user of the dictionary some useful hints about subtle differences among various verbs from the field and thus will enable him to find the exact word he is looking up.

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KILKA UWAG DOTYCZĄCYCH CZASOWNIKÓW OZNACZAJĄCYCH PROCESY MYŚLOWE

W artykule omówiono kilka problemów związanych z opisem w ramach *English- -Polish Dictionary of Verbal Concepts (DoV)* pola semantycznego angielskich czasowników oznaczających procesy myślowe. W pierwszej części pracy przedstawiono trudności związane z ustaleniem zakresu i wewnętrznej struktury dyskutowanego pola, a także z opracowaniem najbardziej oryginalnej i nowatorskiej części hasła powstającego słownika - analizy pojęciowej czasowników, mającej na celu systematyczny i zwarty opis ich własności semantycznych. Druga część pracy zawiera przykładowe hasła słownikowe wraz z krótkim omówieniem problemów, które musiano rozstrzygnąć podczas ich konstruowania.

Przedstawione wnioski nie są oczywiście ostateczne i mamy nadzieję, że dalsza praca przyniesie nowe, lepsze rozwiązania.