Piotr Stalmaszczyk

THEMATIC AND CONCEPTUAL SEMANTICS OF ENGLISH MIDDLE VERBS*

1. INTRODUCTION

Though it is worth remembering that "the lexicon is not just verbs" [P u s t e j o v s k y 1991: 410], recent research in the Government and Binding theory of grammar (and related syntax-oriented frameworks) seems to be concentrated mainly on verbs and constructing appropriate lexical representations for them. And the problem central to this research is **diathesis**: the relation between the semantic (i.e. thematic) roles subcategorized for by a verb or predicate, and the surface expression of these roles as arguments. In this paper I discuss different approaches to thematic roles in generative grammar and their inadequacies. I also provide an alternative approach which enables a more coherent interpretation of syntactic constructions within the framework of conceptual semantics. The syntactic construction under analysis is the so called **middle** verbal diathesis.

In the standard Government and Binding model of generative grammar, lexico-semantic information associated with a predicate is provided by a **theta-grid** (th-grid). The th-grid of a verb is a list of the arguments that the predicator requires. Each of these arguments is identified by the semantic relation it bears to the predicator (i.e. its thematic role – th-role)[1].

---

* This is an extended and revised version of a paper presented at the 1993 Kazimierz Conference on *Semantics and Lexicography*, and published in: H. K o r d e l a and G. P e r s s o n (eds), *New Trends in Semantics and Lexicography. Acta Universitatis Umensis* 1995: 151–165.

[1] The relation between arguments and roles is governed by the **Theta-Criterion**, a biuniqueness condition on th-role assignment, which forces the requirements of the lexicon to be projected into the syntax. The standard formulation of the Theta-Criterion relates roles to arguments [C h o m s k y 1981: 36]: (i) Theta-Criterion: Each argument bears one and only one th-role, and each th-role is assigned to one and only one argument.

A typical th-grid is given in (1). Information included in this grid specifies that *put* is a triadic verb which requires three arguments: an Agent, a Theme, and a Location, as in (2):

(1)   put: <Agent, Theme, Location>,
(2)   John put the book on the shelf.
       Agent   Theme   Location.

2. THEMATIC ROLES

Thematic roles used by researchers in the GB framework originate from the early work connected with lexical semantics, especially F i l l m o r e [1968] and G r u b e r [1965]. Both Fillmore and Gruber postulate a finite set of underlying categories which serve to unite the semantic and syntactic levels.

For F i l l m o r e [1968: 20] it is **Case** which is an "underlying syntactic-semantic relationship". Cases can be identified both semantically and syntactically. The semantic identification proceeds through pointing to intuitive natural classes based on the way in which we conceptualize states and events, whereas the syntactic identification is done by showing covert grammatical distinctions in the ways in which nominals behave in the syntax. F i l l m o r e [1968: 24–25] suggests that the following cases exist: agentive, dative, instrumental, factive, locative, objective (sentential and nominal), benefactive and temporal.

G r u b e r [1965] proposed a set of **thematic relations**, originally based on verbs of motion. The system was further elaborated by J a c k e n d o f f [1972], and incorporated into the theta-theory module of the GB framework [cf. C h o m s k y 1981; S t o w e l l 1981; W i l l i a m s 1981]. The following is a list of thematic relations developed by J a c k e n d o f f [1972] together with some later modifications and additions:

(3)   Agent – an NP expressing will toward the action,
       Theme – for verbs of motion: the moving object, for verbs of location: the thing which is located,
       Location – the NP (usually within a PP) expressing location,
       Source – the initial position of the Theme,
       Goal – the final destination of the Theme,
       Experiencer – the individual who feels or perceives the event,
       Percept – an entity which is experienced or perceived,
       Patient – an entity which undergoes an action,
       Instrument – the object with which the action is performed,
       Benefactive – the entity for whose benefit the event took place.

The Fillmore – Gruber – Jackendoff account is based on the following main assumptions:

(4) a. Thematic relations are atomic labels drawn from a fixed list,
     b. The labels are ordered in a hierarchy and linked to the syntactic positions,
     c. Every argument has exactly one thematic role.

A different approach is advocated by A n d r e w s [1985]. He suggests that there are probably infinitely many semantic roles significant for a grammar of a language. The ones he mentions belong to two main groups: the **Participatory** roles ("borne by what one would think of as actual participants in the situation implied by the verb", 1985: 68), and the **Circumstantial** roles ("borne by entities that do not really participate, but instead form part of the setting of the event", 1985: 69).

There are two Participatory roles – Agent ("A" – vaguely characterized as a participant which the meaning of the verb specifies as doing or causing something, possibly intentionally) and Patient ("P" – a participant which the verb characterizes as having something happen to it, and as being affected by what happens to it). The Circumstantial roles include Directional (Source – "S", and Goal – "G"), Experiencer ("E"), Recipient ("Rc"), Inner Locative ("IL"), Theme ("Th"), Causer ("C"), Instrumental ("I"), Reason ("R"), Benefactive ("B"), Outer Locative ("OL"), Circumstantial Comitative ("CC"), and Temporal ("T").

The following sentences provide examples of the above mentioned roles [A n d r e w s 1985: 70]:

(5) a. Tiger snakes$_{Th}$ inhabit Australia$_{IL}$,
     b. George$_{A/Th}$ walked from/to the shore$_{S/G}$,
     c. I$_E$ love Lucy,
     d. Frederika$_C$ annoys me$_E$,
     e. Bruce$_A$ handed Darlene$_R$ a steak$_{Th}$,
     f. Bill$_A$ prodded the snake$_P$ with a stick$_I$,
     g. The earth$_C$ attracts the moon$_{Th}$,
     h. The car$_{Th}$ is expensive,
     i. Susan caught a lizard in the garden$_{OL}$,
     j. Bruce barbecued a steak for Darlene$_B$,
     k. Alvin shot up a sign for fun$_R$,
     l. Shirley went diving with a speargun$_{CC}$,
     m. Jack ate a sausage during the race$_T$.

A n d r e w s [1985: 70] stresses the fact that "no presently known system of semantic roles can be comprehensively applied in a convincing manner". Nevertheless, various researchers have suggested that reference to th-role labels is involved in the description of numerous linguistic phenomena: grammar of anaphora [J a c k e n d o f f 1972], theory of control [J a c k e n -

d o f f 1972], adjectival passive formation [W i l l i a m s 1981], middle cons-
tructions [R o b e r t s 1987], etc.[2]

3. PROBLEMS WITH THETA ROLES

There is, however, no consensus among linguists on the importance and
contents of th-roles, and some researchers seem to diverge from explicit
reference to th-role labels. This tendency is motivated by the fact that there
appear not to exist any clear criteria for determining what th-roles given
arguments bear. For example, H o e k s t r a [1984: 34] states that the specific
content of notions such as Agent, Theme, etc., may be of some relevance
for the ultimate semantic representation, but not for the purposes of
sentence grammar. J a e g g l i [1986: 588] points to the frequent "indeterminacy
surrounding the nature of the particular thematic role assigned to any
particular argument", and therefore he introduces the following symbols to
cover the th-roles (without attributing to them any theoretical significance):
(6)   th-s – represents the th-role assigned to the subject of a predicate,
       th-d – represents the th-role assigned to the direct object of a predicate,
       th-l – represents the traditional Location,
       th-g – represents the traditional Goal, etc.
Information provided in such th-grids is very limited when compared
to earlier representations (cf. (1) above):
(7)   put: th-s, th-d, th-l [J a e g g l i 1986],
       put: th-1, th-2, th-3 [H o e k s t r a 1984].
More recently, R o z w a d o w s k a [1989] proposes a feature-based ap-
proach to th-roles. After analyzing derived nominals, Polish impersonal
constructions, Polish reflexive verbs, and binding of anaphora in experiential
constructions, she comes to a conclusion that instead of treating th-roles as
discrete undecomposable atomic wholes, it is more appropriate to view
them as bundles of features, such as $[+/-$ sentient], $[+/-$ cause], and
$[+/-$ change].

With features it is possible to account for a great deal of overlap among
th-roles, however, even a very small set of features can be combined in
such a way that it produces definitions not corresponding to any attested
roles. This is also true about the system devised by Rozwadowska – of
the 9 possible feature combinations, two ([+ sentient, – cause, – change]
and [– sentient, + cause, + change]) seem not to define any known relations.

Still other researchers – J a c k e n d o f f [1987], R a p p a p o r t, L a u g -
h r e n and L e v i n [1988], and Z u b i z a r r e t a [1987] – present several
arguments against any usage and reference to the contents of th-roles.

And so, J a c k e n d o f f [1987: 378] argues that some concepts, though
of the same formal type as Source or Goal, do not have any traditional
label, such as the role of the object NP of the verb *pass* in (8):

(8)   John passed *the house*.

Also the direct object NPs of *jump*, *approach*, *pierce* in sentences (9)
have no standard names for their th-roles [J a c k e n d o f f 1987: 378]:

(9)   a. John jumped *the gorge*,
       b. John approached *Harry*,
       c. The arrow pierced *the target*.

Another problem arises with argument NPs having multiple th-roles,
such as the subject of *give* which is an agent and a Source at the same
time. The subject of *roll down the hill* could be an Agent or a Theme.
Also in sentences with verbs such as *buy*, *sell*, *exchange*, *trade*, two actions
are going at the same time, and therefore the subject and the (prepositional)
object NPs bear two th-roles each. As pointed out by J a c k e n d o f f [1987:
382] another verb with multiple th-roles on each NP argument is *chase*.
This is so because for an action of the form *X chase Y* to be true, at
least three conditions must be satisfied (Jackendoff's (21), from which it
follows that X has two roles and Y three:

(10)   a. Y is in motion,
       b. X moves toward (or in path of) Y,
       c. X intends to go to (or catch) Y.

J a c k e n d o f f [1987: 382–383] also discusses cases where multiple NPs
hold a single th-role, as illustrated below:

(11)   a. *The box* has books in *it*,
       b. *The list* includes my name on *it*.

In both (11a) and (11b) two different NPs in the same sentence satisfy
the same th-role. Together with cases of arguments which have multiple
th-roles the sentences in (11) constitute counterexamples to both clauses of
the Theta-Criterion as formulated by C h o m s k y [1981: 36].

J a c k e n d o f f's [1987: 378–379] conclusion is clear: "thematic relations
are to be reduced to structural configurations in conceptual structure; the
names for them are just convenient mnemonics for particularly prominent
configurations [...] the terms Theme, Agent, and so on are not primitives
of semantic theory"[3].

---

[3] Z u b i z a r r e t a [1987: 12] arrives at a similar conclusion: "[...] substantive notions like
theme, patient, goal, experiencer have no grammatical import: rules and principles of grammar
are never formulated in terms of these notions".

Several other papers clearly demonstrate that in a number of morphological processes and syntactic alternations appropriate rules (or generalizations) are "th-blind". Levin and Rappaport [1986] and Rappaport, Laughren and Levin [1988] discuss the adjectival passive formation (APF). Previous accounts of APF [ex. Williams 1981] used the th-role Theme to single out the argument of a verb which become the external argument of the related adjectival passive. However, as demonstrated by Laughren, Levin and Rappaport, reference to this role is both unnecessary and untenable, and it is possible and desirable to recast the rule of APF as a rule which results in the externalization of a single argument of the base verb. The interaction of various principles of grammar ensures that the appropriate argument is externalized, what is important however, is that the principles discriminate between arguments in terms of **manner** of th-role assignment without referring to their **content**. Under this account the th-grid becomes an annotated list of arguments[4]:

(12)   put: x <y, Pz>

Similar conclusions follow from the analysis of non-agentive *-er* nominals [Levin and Rappaport 1988], relations between morphology and syntax in Dutch and English word-formation [Booij 1992], and the direction of th-role assignment [Travis 1984]. In discussing such issues the term th-role is used as a synonym of the term 'argument' and particular semantic content of this argument is irrelevant for the morphological or syntactic processes.

Additionally, an analysis of such phenomena as the locative alternation, middle, unaccusative and inchoative constructions, points towards the existence of deep semantic processes, more general than those described by conventional th-roles[5].

4. THE MIDDLE CONSTRUCTION

An in-depth analysis of just one construction may bring interesting results for the theory of grammar. In recent studies related to the Government-Binding framework one of the constructions undergoing comprehensive analyses is the *middle construction*. The most important studies include Keyser and Roeper [1984], Fellbaum [1986], Fellbaum and Zribi-Hertz [1989], Hale and Keyser [1986, 1987, 1988], Roberts

---

[4] Cf. Williams [1981] for a discussion of argument types, and Stalmaszczyk [1992] for mechanisms of argument identification and various aspects of lexico-syntactic representations for verbs.

[5] Cf. the discussion in Guerssel [1986], and Hale and Keyser [1986, 1987, 1988].

[1987], Z u b i z a r r e t a [1987], F a g a n [1988, 1992], A c k e m a and S c h o-
o r l e m m e r [1993] and H o e k s t r a and R o b e r t s [1993].

The construction in question is exemplified by the following sentences
(ex. (a.-d) from F a g a n 1992: 247; (e.-h) from Q u i r k et al. 1985: 744)[6]:
(13)   a. Glass recycles.
         b. (Nasturtium) Does not transplant well.
         c. Umbrella-style frame sets up easily.
         d. Clear plastic doors lift up for access.
         e. Her books translate well.
         f. The sentence reads clearly.
         g. My teapot pours without spilling.
         h. The sheets washed easily.

It is worth noting here, that there exists a huge discrepancy between
the almost complete lack of interest in this construction in traditional and
university grammars (cf. the very brief notes in Q u i r k, et a l. [1985: 744],
or D o w n i n g and L o c k e [1992: 124]), and considerable interest within
various theoretical frameworks (early Transformational Generative Grammar,
Government-Binding Theory, Lexical Functional Grammar, Word Grammar,
Dixon's 'Grammar on Semantic Principles', etc.).

In this paper I present properties of this construction and problems
connected with devising an appropriate lexico-semantic representation for
verbs entering the middle alternation[7].

5. BASIC PROPERTIES OF THE MIDDLE CONSTRUCTION

The Middle Construction (MC) is derived from basically transitive
verbs, the verb has active morphology, and the S-structure subject corresponds
to the object of transitive constructions (the gap in (14b, d) represents this
position). In this respect middles resemble inchoatives (unaccusative verbs),
cf. (15b, d):
(14)   a. John read the book.
         b. This book reads ___ easily.
         c. Mary ironed the clothes.
         d. The clothes iron ___ well.

---

[6] In this paper I discuss only the English middle; for studies dealing with other languages
see: A c k e m a and S c h o o r l e m m e r [1993], H o e k s t r a and R o b e r t s [1993] for Dutch;
F a g a n [1988, 1992] for German; F e l l b a u m and Z r i b i - H e r t z [1989] for French; and
Z u b i z a r r e t a [1987] for Romance.

[7] The discussion of properties (together with most examples and judgments) is based upon
the papers mentioned above, especially the work of Fellbaum and Fagan.

(15)   a. He broke the cup.
        b. The cup broke ___.
        c. The enemy sank the boat.
        d. The boat sank ___.

Traditional grammars treat this alternation as a subtype of morphological conversion [Q u i r k et a l. 1985: 1565]; in Word Grammar the construction is analysed as an example of a word-formation relation [R o s t a 1992: 327]; and according to D i x o n [1991: 327] the middle is a marked construction, representing the process of promotion-to-subject. On the other hand, early TG studies suggested a transformational account of the middle, whereas Lexical Functional Grammar [ex. B r e s n a n 1980: 115–116] introduced rules affecting grammatical functions[8].

The promotion of the D-structure object (the internal, direct argument in the sense of W i l l i a m s 1981) makes the process of middle formation reminiscent of passivization: in both cases there is an implied agent, lacking in the unaccusative constructions (cf. (15b, d)).

However, in the MC the missing agent argument cannot be lexically represented and there is no possibility of re-linking it, in contrast to the *by*-phrase option available for passives:

(16)   a. This book was read by John.
        b. * This book reads well by John.

From the above properties it follows that at the level of Argument Structure (i.e. the lexico-syntactic representation) verbs displaying the middle alternation have the following representation (where x is the external, and y the internal argument, cf. W i l l i a m s 1981):

(17)   read – a. (transitive): V [x <y>],
              – b. (middle): V [<y>].

A closer analysis of the promoted direct object reveals that there exists a constraint on the type of objects which can become subjects in MC, as illustrated by the contrast in (18):

(18)   a. This poem translates easily.
        b. * This poem learns by heart easily.
        c. Old cars sell easily
        d. * Old cars buy easily.

The class of transitive verbs which may appear in the MC is restricted to those requiring an **affected** internal argument (with some possible exceptions, as for ex. the verb *read*). The affectedness constraint on MC is further confirmed by the fact that only one group of the *psych-verbs* can appear in this construction:

---

[8] For an overview of some previous accounts of the middle construction, cf. S t a l m a s z c z y k [1993].

(19)   a. Joan fears mice.
        b. * Mice fear easily.
        c. Mice terrify Joan.
        d. Joan terrifies easily.

Using traditional thematic relations it may be said that the MC is a Theme-oriented construction: it states that any Agent can/may/will perform the action, taking under account some invariant or inherent properties of the Theme[9].

6. ANALYSES OF THE MIDDLE CONSTRUCTION

Analyses within the GB framework consider the MC formation at two levels: syntactic and pre-syntactic (or lexical)[10]. In Keyser and Roeper [1984] it is assumed that middles are derived from their transitive counterparts by means of a lexical rule that absorbs the objective case and the subject th-role. In contrast to unaccusatives, middles emerge from the lexicon as transitives, and a syntactic rule of move-a (in this case NP-movement) moves the D-structure object into the S-structure subject position.

The MC is derived through a lexical rule; in formulating this rule Keyser and Roeper follow the standard approaches to Romance languages and establish in the grammar of English an abstract, phonologically null, reflexive clitic *si* which absorbs objective case and the subject th-role. However, as pointed out by Jaeggli [1986], it does not seem reasonable to assume the existence of a null clitic on the one hand, and the existence of a phonologically spelled out clitic on the other, while the postulated abstract element lacks relevant properties of the Romance reflexive *se/si* morpheme.

A more recent analysis is due to Roberts [1987], who introduces a middle formation rule of the form "**Externalize (Theme)**", roughly in the sense of Williams [1981]. This rule is an operation on th-grids, where the Agent role is suppressed and the Theme is externalized[11]:
(20)   [*Agent*, Theme] ⟶ [(Agent), *Theme*].

Rule (20) restricts the class of verbs undergoing middle formation to transitive verbs as it can only affect verbs with Themes. Restricting the notion of Theme, Roberts can apply this rule to the relevant class of

---

    [9] In the case of psych-verbs (ex. *terrify*) the construction is Experiencer-oriented and the unexpressed argument is a Percept.

    [10] Cf. the discussion in Ackema and Schoorlemmer [1993].

    [11] The following rule represents one sub-class of psych-verbs, (cf. (19) above): (i) [*Percept*, Experiencer] ⟶ [(Percept), *Experiencer*].

transitives, i.e. the ones with an affected internal argument (**Affected Theme**). A very important aspect of rule (20) is that it makes the claim that the Agent th-role is not eliminated, but only prevented from being assigned to the external argument (i.e. it is unprojected and unlinked). Still other properties of the MC point towards the importance of a more semantically based approach.

The MC receives a non-eventive, generic, habitual or potential interpretation, and according to K e y s e r and R o e p e r [1984] because of this property it is incompatible with the progressive, perfective past or imperative (though judgments vary, especially in the case of (21b, c))[12]:

(21)   a. This book reads easily.
        b. * This book reads easily at the moment.
        c. * This book read easily yesterday.
        d. * Read easily, book!

Sentences (21b, c) contrast with the non-deviant unaccusative constructions:

(22)   a. The boat is sinking.
        b. The boat sank yesterday.

Sentence (21a) can have the following, generic, interpretation:

(23)   It is easy, for everyone, to read this book.

One recent approach explicitly dealing with the semantic properties of middles is advocated by Sarah Fagan. In her recent work [F a g a n 1988, 1992], she proposes to treat middle formation as an example of a general process of **genericization**. Genericization is a process which assigns a generic interpretation to a th-role that is subsequently left unrealized (unlinked). Underlying this conception is the notion of **saturation** of th-roles developed by R i z z i [1986]. Saturation is understood as an association of a th-role with some referential content – "that is, when we can understand 'who does what' in the situation referred to" [R i z z i 1986: 508]. Typically, the Projection Principle and the Th-Criterion ensure that saturation is accomplished in the syntax. Rizzi, however, allows for the possibility that the Projection Principle operates in the lexicon through the rule of **arbitrary interpretation**. According to R i z z i [1986: 512] arbitrary interpretation should be characterized by a collection of features [+ human, + generic, +/ − plural]. Such features are inherent in certain nominal elements (German *man*, French *on*, Italian *si*, etc.) or are assigned through (24):

(24)   Assign + **arb** to the direct th-role.

---

[12] Cf. different judgments in K e y s e r and R o e p e r [1984] and R o s t a [1992]; and the discussion in F a g a n [1992]. According to D i x o n [1991: 326] 'present' is the most common choice but past tense is also possible.

The direct th-role is the direct argument th-role, i.e. the only role directly th-marked by the verb. th-roles which are saturated lexically are not realized in the syntax, and therefore Rizzi presents a reformulation of the Projection Principle [R i z z i 1986: 509][13]:

(25)   Categorial structure reflects **lexically unsaturated** thematic structure at all syntactic levels.

The Projection Principle as stated in (25) asserts that only unsaturated arguments are accessible to syntactic interpretation.

In summary, th-roles can be saturated in the syntax through the standard Projection Principle, or in the lexicon – by virtue of both (24) and (25). If a th-role is saturated already in the lexicon it never appears in the syntax, nevertheless it may be understood because it still belongs to the lexical meaning of the verb. The two different ways of saturating th-roles may be observed in the contrasting behaviour of verbs like *eat* and *devour*:

(26)   a. Frank ate an enormous burger in the bar.

        b. Frank ate in the bar.

        c. Frank devoured an enormous burger in the bar.

        d. * Frank devoured in the bar.

In (26a, c) the Patient th-role assigned by the verbs to the object is saturated syntactically and therefore overtly projected into the syntactic structure of the sentence. In (26b) the th-role is not projected into the syntax, but is saturated lexically, proving that there exist two options for saturation in the case of the verb *eat*; however, the semantically related verb *devour* requires syntactic saturation of the relevant role (i.e. the argument bearing the role must be explicit – cf. (26d)).

Fagan incorporates Rizzi's observation into her work, and suggests that there exist two rules responsible for middle formation [F a g a n 1988: 198][14]:

(27)   Assign +arb to the external th-role.

(28)   Externalize the direct th-role.

By rule (27) the external th-role of middle verbs – usually, but not always, an Agent – is no longer associated with a structurally projected position though it is still understood (generically). Rule (28) accounts for the fact that the direct th-role of the transitive verbs becomes the external argument of the detransitivized middle verb. This rule bears some similarity to Roberts' rule (20), it is, however, more adequate as it deals with

---

[13] The standard formulation of the (Extended) Principle is provided by C h o m s k y [1981: 29] and [1982: 10]: Projection Principle: (i) Representations at each syntactic level (i.e. LF, and D- and S- structure) are projected from the lexicon, in that they observe the subcategorization properties of lexical items. // (ii) Every IP (S) must have a subject.

[14] F a g a n [1992: 160–170] further elaborates these rules in order to provide an account for French and German middles.

positions of arguments in the Argument Structure of the verb and not with the specific content of the roles.

Fagan assumes that by assigning the index **arb** to a role, it becomes lexically saturated, and therefore it will not be realized syntactically. Under this account middle formation is treated as an operation on the Argument Structure of a verb. A possible, negative, consequence of such an approach is the existence of two external roles (arguments): the original external argument, and the externalized Theme (i.e. the internal argument). One way of avoiding this problem is to assume that lexical saturation deletes the primary external argument at the lexico-syntactic level of representation (for ease of presentation, in the rules below the assignment of $< +\text{arb}>$ replaces the external argument). Schematically, the derivation of a MC may be presented as the following operation on Argument Structure (where: x – external argument, y – direct argument, yx – externalized direct argument):

(29)   1. Underived AS: V [x $<y>$],
         2. Assign $< +\text{arb}>$ to x: V [$< +\text{arb}>$ $<y>$],
         3. Externalize y: V [y_x],
         4. Derived AS: V [y].

However explicit the above solution might seem, it does not take under account all important (semantic) properties of the MC.

The subject of the MC must have certain inherent qualities that trigger the process denoted by the verb[15]:

(30)   a. These figures add up to 1000.
         b. Which apples bake best?
         c. Oranges peel easily.

Keeping this property in mind, we might further paraphrase sentence (21a):

(31)   It is easy, for everyone, to read this book because of its certain properties (such as large print, or clear style, etc).

The MC requires the presence of a modifier – adverbial, negation, contrastive stress, emphatic *do*, reflexive, etc.[16]:

(32)   a. This novel reads quite well.
         b. Modern feminist literature simply doesn't read.
         c. GB papers read like detective stories.

---

[15] This property seems more explicit in languages which require reflexives in middle constructions, cf. the German and Polish equivalents of (21a): (i) Das Buch liest sich leicht. // (ii) Ta książka czyta się łatwo.

[16] Discussing this property, D i x o n [1991: 325] suggests that "promotion to subject is possible when there is some marker of the success of the activity". L a k o f f [1977: 251–252] discussing sentences in (i) argues that (i.a) is an instance of an agent-focused construction, as opposed to patient-focused middles: (i) a. Rollce Royces drive themselves. // b. * Rollce Royces drive themselves easily.

However, the impossibility of (i.a) follows rather from a general constraint on multi-adverbial modification: (ii) a. * This book reads easily well. // b. * John reads easily well.

   d. Bureaucrats BRIBE.

   e. Bureaucrats *do* bribe!

   f. Good cars drive themselves.

The modifier denotes the quality of the process and emphasizes the generic, habitual or potential interpretation. The inherent properties of the MC subject are often stressed by the use of the verb *will*, especially in the negative form:

(33) a. The figures will not add.

   b. This book won't sell.

   c. The suit-case would not lock.

As often noted [cf. F e l l b a u m 1986; F a g a n 1988] the nature of the modification, or even its very presence, is connected with pragmatically given information, as attested by (34):

(34) a. This umbrella folds up.

   b. This dress buttons.

   c. That dress zips up.

   d. Glass recycles.

The above sentences demonstrate that in some cases it is not the generic interpretation („people in general") which is most characteristic of the MC, but rather the specific qualities of the subject, often interpreted and properly understood because of some extralinguistic factors.

  All of the above mentioned approaches to the MC take for granted the existence of the Agent th-role (or external argument) in the underlying representation of the middle verbs. In Roberts' account this th-role is still present after the application of rule (20), though it is unprojected and unlinked. Fagan, on the other hand, argues for a process of genericization which leaves the syntactically unexpressed argument understood in a generic sense.

7. MIDDLE CONSTRUCTIONS AND CONCEPTUAL STRUCTURE

  Below I suggest a different approach, namely that there is no Agent th-role in the MC at any level of representation. This is the position taken by H a l e and K e y s e r [1987] which I adopt and implement with ideas stemming from the above discussed rules of saturation and genericization. Within the framework of **Conceptual Semantics**, as developed by J a c k e n d o f f [1987, 1990], the following lexical representations for the verb *break* can by provided:

(35) John broke the cup,

   AS: V [x <y>],

   LCS: [X CAUSE (Y BECOME "BROKEN")],

(36)   The cup broke,
        AS: V [y],
        LCS: [Y BECOME "BROKEN"].

In Conceptual Semantics the lexical semantic representation which encodes the meaning of a verb is called the **Lexical Conceptual Structure** **(LCS)**. LCS is a representation of the concept named by the verb and the participants in the action (represented by variables); meaning is encoded through predicate decomposition. Lexical Conceptual Structure is composed out of elements from a universal set of primitive functions and the background assumption is that at some level of representation the meanings of verbs are not unanalyzable entities. According to P u s t e j o v s k y [1991] lexical decomposition is possible if it is performed generatively, i.e. if generative devices construct semantic expressions.

CAUSE and BECOME are the primitive functions of Conceptual Structure, X and Y the arguments, and "BROKEN" is an abbreviation for a more articulated expression[17]. The appropriate representation for the middle variant of *break* is identical with the one for the unaccusative variant:

(37)   China cups break easily,
        AS: V [y],
        LCS: [Y BECOME "BROKEN"].

The option in (35) – a causative predicate with an agent participant – is the only one with the external argument present at the deepest level of representation. I claim here that no agent (external argument) is present in the CS representation for unaccusatives and middles, and that the relation between dyadic (35) and monadic (36) and (37) is governed by a **causative rule** [cf. H a l e and K e y s e r 1986: 19] which embeds the monadic CS as a complement of the general causative function:

(38)   [X CAUSE (Y...)]

where (Y...) can be interpreted as "Y undergo change". This CS ("undergo change") defines the crucial property of verbs which allow the middle variant and points directly to the affectedness of the object. The rule responsible for middle formation (40) is an instance of a more general rule (39):

(39)   [X PREDICATE (Y...)] ⟶ [Y...],
(40)   [X CAUSE (Y "undergo change")] ⟶ [Y "undergo change"].

H a l e and K e y s e r [1987: 20] call this rule the **Ergative-Middle Alter-nation**, and state that: "on this view a middle does not differ in any interesting sense from the unaccusative member in an ergative alternation".

---

[17] On the status of primitive functions, cf. H a l e and K e y s e r [1987, 1988] and Z u b i z a r - r e t a [1987].

Comparison of the representations in (35)–(37), and especially the existence of the common, embedded, element in all three representations, suggests a possible "deeper" level of representation, embodying crucial aspects of transitives, unaccusatives and middles. Such a deeper representation has in fact been proposed by Guerssel [1986] and adopted in Hale and Keyser [1987, 1988].

Guerssel [1986: 69] states that "a more basic level of conceptual structure, to be referred to as the Primitive Conceptual Structure (PCS), must be posited. PCS is intended to be more basic than the LCS in its expression of the meaning of a predicate in that it simply expresses the notion conveyed by a predicate, and does not involve the representation of the participants in terms of variables". Guerssel suggests that the primitive human classification of processes recognizes a class whose realization is always the result of some external force or condition.

Hale and Keyser [1987, 1988] follow Guerssel's ideas in assuming that the PCS (or in their terminology, adopted here, the **Elementary Lexical Conceptual Structure – ELCS**) is the most elemental representation of LCS, a "prelinguistic" level, and it is devoid of linguistic elements of LCS (such as the argument variables which project into syntax and the event position, in the sense of Higginbotham 1985). Later on, however, they do not discuss the "pure" ELCS but rather equip it with two different sets of variables: unrestricted and restricted. Unrestricted variables (of the form X, Y, Z) represent the arguments of a predicator which are associated obligatorily with grammatical functions (GFs, as defined in Chomsky 1981) in Lexical Structure (i.e. Argument Structure). Restricted variables on the other hand, are only optionally projected as GFs in syntax. There is one restricted variable of importance for this discussion – the conceptual category – **Circumstance** ("C").

A proposed ELCS for verbs with a transitive, unaccusative and middle variant is given in (41a), with reading as in (41b):

(41)   a. C $\longrightarrow$ [Y "undergo change"],
         b. Some circumstance "C" results in Y's change.

In the system originally proposed by Guerssel the PCS for a verb like *break* (and its nominalizations) is simply (42):

(42)   PCS: [BREAK].

As a PCS it is intended to represent the notion of breaking and does not involve a formal representation of the participants. However, it seems possible and justified to introduce an abstract, unspecified variable (represented as "Q"), realized at the lexico-semantic level as an argument (variable), constant (cf. the case of *eat*), or unprojected variable (cf. the case of *wash*). The idea behind this notion may be explained with a brief discussion of the appropriate semantic representations for verbs behaving like *eat* and

wash. As has already been noted in the discussion of the contrast exemplified in (26), there exist two variants of the verb *eat*: transitive and intransitive[18]. I assume here that they have different lexico-semantic representations, with the intransitive variant containing a constant argument "FOOD":

(43) a. eat: [X EAT Y],
      b. eat: [X EAT "**FOOD**"].

This constant, unlike variables, and constants in idioms, is not projected from LCS onto other levels of representation and therefore the respective argument structure grids (i.e. modified and restricted th-grids) have the following form:

(44) a'. eat: V [x <y>],
      b'. eat: V [x].

The two variants of *eat* have different LCS representations (43a) and (43b), however, it seems reasonable to postulate the existence of a more primitive level of lexico-semantic representation from which both LCS forms are derived (cf. Guerssel's PCS). For this purpose I propose the following primitive LCS for the verb *eat*:

(45) eat: [X EAT Q].

In (45) "Q" is an abstract, unspecified variable, realized as "Y" in the transitive variant, or as "**FOOD**" in the intransitive one. "Y" is further projected onto the syntactic representation (and appears as the NP object of the verb), "**FOOD**" on the other hand, is not projected [cf. Z u b i z a r - r e t a 1987: 10]:

(46) eat: [X EAT Q] ⟶ a. [X EAT Y],
                            AS: V [x <y>],
                          b. [X EAT "**FOOD**"],
                            AS: V [x].

The introduction of constants and abstract variables at appropriate levels of lexical representation of verbs allows for an elegant and comprehensive treatment of verbal diathesis, as illustrated by the following lexico-semantic representation for verbs like *dress, shave, wash*, etc. Verbs of this type appear in transitive constructions, constructions with a reflexive object, and intransitive constructions:

(47) a. Mary washed the baby.
      b Mary washed herself.
      c. Mary washed.

---

[18] As observed already by G r u b e r [1965], intransitive *eat* has a more restrictive meaning than transitive *eat* : sentence (i) cannot be interpreted as (ii), i.e. it can only mean that the baby ate food: (i) The baby ate. // (ii) The baby ate a piece of chalk. Cf. also the discussion in Z u b i z a r r e t a [1987: 10].

The three variants have the respective LCSs:
(48)   a. wash : [X WASH Y],
        b. wash : [X WASH X],
        c. wash : [X WASH X].

In LCS (48b) there are two identical variables, the second being spelled out in the syntax as an appropriate reflexive. In (48c) the variable is unprojected, and so it does not appear in argument structure (and syntax). A unified entry for *wash* has thus the following form:
(49)   wash : [X WASH Q] $\longrightarrow$ a. [X WASH Y]
                                         AS: V [x <y>],
                                     b. [X WASH X]
                                         AS: V [x_i <y_i>],
                                     c. [X WASH X]
                                         AS: V [x].

The abstract variable is realized as a transitive object (47a), reflexive object (47b), or as an unprojected variable, yielding the intransitive construction (47c).

It is also possible to use the abstract variable in constructing the primitive, elemental CS for the verb *break*:
(50)   break: [Q CAUSE (BECOME "BROKEN")].

If the variable "Q" is projected onto the CS it is realized as an external argument of CAUSE and yields the transitive configuration (35); next, this argument is saturated in syntax, in accordance with the Projection Principle. On the other hand, the variable "Q" may be saturated already at the deepest semantic level (and thus unprojected), yielding the unaccusative (36) and middle (37) constructions. In order to explain the difference between these two constructions I reintroduce the feature [+/−arb], where [+arb] abbreviates all relevant features of the MC: inherent property, non-eventive, generic and potential interpretation, etc. (cf. the discussion in F a g a n 1988, 1992)[19].

Now the derivation of transitive, middle and unaccusative variants of break proceeds as below:
(51)   **Transitive**:
        ELCS: [Q CAUSE (Y BECOME "BROKEN")],
        LCS: [X CAUSE (Y BECOME "BROKEN")],
        AS: V [x (y)].
        (Saturation in syntax).

---

[19] The motivation for retaining this feature is similar to the one discussed in the context of the thematic role *agent* in Z u b i z a r r e t a [1987: 12], where it is pointed out that this notion is "perhaps a remnant of a primary semantic category in early stages of language acquisition".

(52)   **Middle**:
      ELCS: [Q CAUSE (Y BECOME "BROKEN")] $\longrightarrow$
                [X − < +arb> CAUSE (Y BECOME "BROKEN")],
      LCS: [Y BECOME "BROKEN"],
      (Saturation in LCS),
      AS: V [y].

(53)   **Unaccusative**:
      ELCS: [Q CAUSE (Y BECOME "BROKEN")] $\longrightarrow$
                [X − < −arb> CAUSE (Y BECOME "BROKEN")],
      LCS: [Y BECOME "BROKEN"],
      (Saturation in LCS),
      AS: V [y].

For a verb to enter the middle alternation, the following semantic conditions must be fulfilled:

(54)   1. The ELCS has the form: [Q CAUSE (Y...)].
      2. (Y...) is interpreted as "Y undergo change"; this interpretation accounts for the affectedness of the object.
      3. The abstract variable "Q" is realized as [+arb] and it is saturated in the LCS, yielding the monadic LCS [Y...].

The obligatory presence of the CAUSE component in the underlying representation for the MC is confirmed by the following paradigm:

(55)   a. Joan wiped the dishes.
      b. * These dishes wipe easily.
      c. Joan wiped the dishes dry.
      d. These dishes wipe dry easily.

(55b) is ill-formed because the appropriate LCS for the transitive structure lacks the notion CAUSE:

(56)   [X "WIPE" Y].

However, the characteristic feature of resultative formation is the embedding of the simple structure (56) into a CAUSE function:

(57)   [X CAUSE (Y BECOME Z) BY (X "WIPE" Y)].

Structure (57) complies with the requirements for middle formation and therefore the resultative middle (55d) is well-formed.

One more aspect of the MC remains so far unexplained: the presence of an adverb, or other modifying element. Sentences (58) demonstrate that the adverb in the MC is process-oriented, in contrast to the agent-oriented adverb in transitive sentences (59):

(58)   a. This oven cleans easily.
      b. New cars sell easily.
      c. This book reads effortlessly.

(59)   a. Joan cleaned the oven easily.
      b. Dealers sell new cars easily.
      c. John reads books effortlessly.

In sentences (58) the properties of the derived subject are responsible for the ease of cleaning, selling, reading. It is therefore possible to assume that the presence of the modifier is triggered by the feature [+arb]. This may be an effect of some semantic "incompleteness" forced by the feature [+arb]. Z u b i z a r r e t a [1987: 148] suggests a possibility of explaining the obligatory presence of a modifier in terms of an interaction of focus and Argument Structure. When the variable "Q" is realized as "X" (i.e. a variable projected onto the external argument position) the presence of a modifier is optional, however, when it is realized as $X - <+arb>$ it requires a concluding element: adverb, negation, contrastive stress, etc. This concluding element appears in the CS after the "Q" variable is realized as $X - <+arb>$; its presence may be captured by adding a manner component to the CS:

(60)   ELCS: [Q CAUSE (Y...)] $\longrightarrow$ [X $- <+arb>$ CAUSE (Y...)],
         LCS: [(Y...) (IN MANNER Z)].

Above, I have provided the following generic interpretation for sentence (21a) (repeated here as (61)):

(61)   This book reads easily,
(62)   It is easy, for everyone, to read this book.

The formalisms introduced above enable now providing a more accurate interpretation of sentence (61):

(63)   For $X - <+arb>$, it is possible that X READ Y in manner
         Z (because of inherent PROPERTY of Y).

In this LCS, the variable X is bound by the operator $X - <+arb>$ and therefore only the variable Y can be projected on the level of AS. In addition, the LCS also specifies the obligatory presence of a modifying element. Technically, this requirement is realized by creating a place in the AS to be saturated by an adjunct. If the modifying element is an adverbial it appears as an obligatory adjunct in the AS, and in syntax it is Chomsky-adjoined to projections of V(erb). The account of negation might be similar. Contrastive stress is more problematic as we have to take under consideration the level of Phonetic Form. However, in the model of grammar presented by J a c k e n d o f f [1987, 1990], there exist correspondence rules which link phonological, syntactic, and conceptual levels.

The concluding element of the MC modifies the process described by the middle verb, and it seems plausible to suggest that the semantic (or in some cases even pragmatic) interaction between the modifier and the predicate results in the sense of agency felt to be present in the MC and attributed in the previous accounts to an implicit Agent role.

REFERENCES

A c k e m a, P. and Schoorlemmer, M. (1993) "The Middle Construction and the Syntax-Semantics Interface", *OTS Working Papers*, Utrecht, June 1993.

A n d r e w s, A. (1985) "The major functions of the noun phrase". In T. S h o p e n, (ed.) *Language Typology and Syntactic Description*. vol. 1, Cambridge: Cambridge University Press, 62–154.

B o o i j, G. (1992) "Morphology, Semantics and Argument Structure". In I. R o c a, (ed.) *Thematic Structure. Its Role in Grammar*. Berlin and New York: Foris Publications, 45–62.

B r e s n a n, J. (1980) "Polyadicity: Part I of a Theory of Lexical Rules and Representations". In T. H o e k s t r a, H. v a n d e r H u l s t, and M. M o o r t g a r t, (eds) *Lexical Grammar*, Dordrecht: Foris, 97–121.

C h o m s k y, N. (1981) *Lectures on Government and Binding*. Dordrecht: Foris.

C h o m s k y, N. (1982) *Some Concepts and Consequences of the Theory of Government and Binding*. Cambridge, Mass.: MIT Press.

D i x o n, R. M. W. (1991) *A New Approach to English Grammar, On Semantic Principles*. Oxford: Oxford University Press.

D o w n i n g, A. and L o c k e, P. (1992) *A University Course in English Grammar*. New York: Prentice Hall International.

F a g a n, S. (1988) "The English Middle". *Linguistic Inquiry* 19: 181–203.

F a g a n, S. (1992) *The Syntax and Semantics of Middle Constructions*. Cambridge: Cambridge University Press.

F e l l b a u m, C. (1986) *On the Middle Construction in English*. Bloomington: IULC.

F e l l b a u m, C. and Z r i b i – H e r t z, A. (1989) *The Middle Construction in French and English: A Comparative Study of its Syntax and Semantics*. Bloomington: Indiana University Linguistics Club Publications.

F i l l m o r e, C. J. (1968) "The Case for Case". In E. B a c h, and R. H a r m s, (eds) *Universals in Linguistic Theory*. New York: Holt, Rinehart & Winston, 1–88.

G r u b e r, J. (1965/1976) *Lexical Structures in Syntax and Semantics*. Amsterdam: North Holland (published version of MIT doctoral dissertation, 1965).

G u e r s s e l, M. (1986) "On Berber Verbs of Change: A Study of Transitivity Alternations". *Lexicon Project Working Papers* 9, Cambridge, Mass.: Center for Cognitive Science, MIT Press.

H a l e, K. and K e y s e r, J. (1986) "Some Transitivity Alternations in English". *Lexicon Project Working Papers* 7, Cambridge, Mass.: Center for Cognitive Science, MIT Press.

H a l e, K. and K e y s e r, J. (1987) "A View from the Middle". *Lexicon Project Working Papers* 10, Cambridge, Mass.: Center for Cognitive Studies, MIT Press.

H a l e, K. and K e y s e r, J. (1988) "Explaining and Constraining the English Middle". In C. T e n n y, (ed.) *Studies in Generative Approaches to Aspect, Lexicon Project Working Papers* 24. Cambridge, Mass.: Center for Cognitive Studies, MIT Press, 41–57.

H i g g i n b o t h a m, J. (1985) "On Semantics". *Linguistic Inquiry* 16: 547–593.

H o e k s t r a, T. (1984) *Transitivity. Grammatical Relations in Government-Binding Theory*. Dordrecht: Foris.

H o e k s t r a, T. and R o b e r t s, I. (1993) "Middle Constructions in Dutch and English". In E. R e u l a n d and W. A b r a h a m (eds) *Knowledge and Language. Volume II: Lexical and Conceptual Structure*. Dordrecht: Kluwer Academic, 183–221.

J a c k e n d o f f, R. (1972) *Semantic Interpretation in Generative Grammar*. Cambridge, Mass.: MIT Press.

J a c k e n d o f f, R. (1987) "The Status of Thematic Relations in Linguistic Theory". *Linguistic Inquiry* 18: 369–411.

Jackendoff, R. (1990) *Semantic Structures*. Cambridge, Mass.: MIT Press.

Jaeggli, O. (1986) "Passive". *Linguistic Inquiry* 17: 587–622.

Keyser, J. and Roeper, T. (1984) "On the Middle and Ergative Constructions in English". *Linguistic Inquiry* 15: 381–416.

Lakoff, G. (1977) "Linguistic Gestalts". *Papers from the Chicago Linguistic Society* 13: 225–285.

Levin, B. (1985) "Lexical Semantics in Review: An Introduction". In B. Levin (ed.) *Lexical Semantics in Review, Lexicon Project Working Papers* 1. Cambridge, Mass.: Center for Cognitive Science, MIT Press, 1–62.

Levin, B. and Rappaport, M. (1986) "The Formation of Adjectival Passives". *Linguistic Inquiry* 17, 623–661.

Levin, B. and Rappaport, M. (1988) "Non-event -*er* Nominals: A Probe into Argument Structure" *Linguistics* 26: 1067–1083.

Pustejovsky, J. (1991) "The Generative Lexicon". *Computational Linguistics* 17: 409–441.

Quirk, R. et al. (1985) *A Comprehensive Grammar of the English Language*. London and New York: Longman.

Rappaport, M., Levin, B. and Laughren, M. (1988) "Niveux de représentation lexicale". *Lexique* 7: 13–32.

Rizzi, L. (1986) "Null Objects in Italian and the Theory of *pro*". *Linguistic Inquiry* 17: 501–557.

Roberts, I. (1987) *The Representation of Implicit and Dethematized Subjects*. Dordrecht: Foris.

Rosta, A. (1992) "English Mediopassives". *Working Papers in Linguistics* 4, London: University College, 327–351.

Rozwadowska, B. (1989) "Are Thematic Relations Discrete?" In R. Corrigan, F. Eckman and M. Noonan (eds) *Linguistic Categorization*. Amsterdam: John Benjamins, 115–130.

Rozwadowska, B. (1992) *Thematic Constraints on Selected Constructions in English and Polish*, Wrocław: Wydawnictwo Uniwersytetu Wrocławskiego.

Stalmaszczyk, P. (1992) *The Structure of Thematic Relations in English*, Łódź: EKORNO.

Stalmaszczyk, P. (1993) "The English Middle Construction and Lexical Semantics", *Papers and Studies in Contrastive Linguistics* 27: 133–147.

Stowell, T. (1981) *Origins of Phrase Structure*. Cambridge, Mass.: MIT Press (doctoral dissertation).

Travis, L. (1984) *Parameters and Effects of Word Order Variation*. Cambridge, Mass.: MIT Press (doctoral dissertation).

Williams, E. (1981) "Argument Structure and Morphology". *The Linguistic Review* 1: 81–114.

Zubizarreta, M.-L. (1987) *Levels of Representation in the Lexicon and in the Syntax*. Dordrecht: Foris.

Piotr Stalmaszczyk

TEMATYCZNA I KONCEPTUALNA SEMANTYKA ANGIELSKICH CZASOWNIKÓW MEDIALNYCH

Celem autora jest omówienie wzajemnych związków semantyki i składni we współczesnej gramatyce generatywnej (zwłaszcza modelu Chomsky'ego). Pierwsza część artykułu zawiera analizę różnych teorii ról tematycznych i problemów związanych z wyszczególnieniem wszystkich typów ról w teoriach wypracowanych przez Fillmore'a, Grubera i Jackendoffa, a stosowanych przez gramatyków generatywnych.

Druga część artykułu poświęcona jest analizie jednej konstrukcji – angielskiej stronie medialnej (np. *This book reads easily – Ta książka czyta się łatwo*) i czasowników w niej występujących, tzw. *middle verbs*. Po przedstawieniu właściwości składniowych i semantycznych tej konstrukcji konieczne staje się zaproponowanie odpowiednich poziomów repezentacji leksykalnych dla *middle verbs*.

Analiza zaproponowana w artykule zakłada, że na żadnym poziomie reprezentacji w konstrukcjach medialnych nie występuje rola tematyczna *agensa*. Właściwe rozwiązanie polega na zaproponowaniu elementarnej reprezentacji leksykalno-semantycznej, z której można derywować poszczególne konstrukcje, w tym również stronę medialną. Semantyka konceptualna leżąca u podstaw przyjętej w artykule analizy w znacznym stopniu nawiązuje do propozycji Raya Jackendoffa.