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MODAL VERB DISTRIBUTION: FUNCTIONAL SEMANTICS

Стаття присвячена інтерпретації семантики модального дієслова в економічному дискурсі. Реалізація певного компонента значення залежить від авторської інтенції, регістру дискурсу та дистрибутивної моделі. Домінантний компонент значення, представлений у словниковій статті, «прочитується» першим, решта компонентів активізуються зазначеними факторами у дискурсі.

Ключові слова: модальне дієслово, значення, етимологія.

The area of modality is concerned with notions such as obligation and necessity (strong modality), possibility and permission (weak modality), volition, and ability. The notions of necessity and possibility are classified as epistemic modality and those of obligation and permission are termed as deontic modality.

English basic modals undergo deep changes primarily within their own paradigm due the influence of grammaticalization and lexicalization, both processes of the interparadigmatic character (Bolinger 1980). Numerous investigations of modal semantics limited by phrase or sentence have not found a new perspective in this domain (Palmer 1986; Heine 1993; Bybee et al. 1994). Like so many others before it, this exposition is of the meaning of the English modal auxiliaries, which are found in utterances conveying modal meanings such as *ability*, *possibility*, and *permission*. However, unlike the majority of its predecessors, the present rendering admits to being about more than semantics. With the five central modal auxiliaries, *can*, *may*, *must*, *will*, and *shall*, the modals for short, as a point of departure, a framework will be formulated to shed light on some central aspects of the immense context and context sensitivity involved in the meaning of utterances of sentences containing a modal auxiliary. Within the discourse structure modal semantics can define its complex nature and reveal some shifts.

So far all “irregular” features of the earliest research failed to interpret modals semantics. Discourse analysis is able to stress the shifts in modal semantics which did

not fit the sentence theory. The fact is that modals out of discourse are not able to reveal the deep processes occurring in speech continuum. The surface results are usually referred to functional irregularities. Gradually a number of modal substitutes or quasi-modals (*be to, be going to, have to, ought to, had better, be about/able/bound to*) and notional verbs of the want type join the paradigm of modal operators. Such shifts cause positional shifts in the traditional modals taxonomy. It proves the hypothesis about the dynamic character of modal semantics.

The objective of the present paper is an interpretation of the meaning of the modal *must* with the help of the componential, definitional, etymological, distributional, and discourse analyses in the discourse for specific purpose. As for the discourse register (economics) it is considered to be stylistically unmarked, therefore the meaning of *must* can differentiate mostly the components of the collective experience.

The dictionary entry includes three main components of *must* meaning:

- 1.1. *must* is a modal verb *necessity* (Advanced Cambridge),
- 1.2. *must* is a modal verb *probability* (Advanced Cambridge),
- 1.3. *must* is a modal verb expressing *be obliged, required, or forced to* (Webster's Dictionary).

The definitional analysis reveals the following readings of *must* which correlate with other modals and helps to construct a taxonomy of modal verbs:

Must (it is important or necessary that someone *must* do something)- *should*

Must (it is important or necessary for something to happen)- *have to*

Must (you intend to do something) - *will*

Must (you are suggesting that someone do something) – *have to*

Must (if you ask why someone *must* do something) – *need to*

Must (if you don't want to do something) – *have to*

Must (when you know that you cannot stop doing something) – *have to*

Must (when you tell someone that you did not want them to now) – *have to*

Must (showing how eager or enthusiastic you are to do something) – *want to*

Must +be (you think that it is very likely to be true) *have to*

Modal + have (you are assuming that they did it or that it happened) – *should*

Modal + have (you mean that it is necessary for the first thing to have happened) – *should* [Collins Cobuild English Language Dictionary, c. 950-95].

So the meaning of *must* can differentiate the following components: [necessity](#), [obligation](#) or compulsion, [requirement](#), probability.

etymology of *must*: O.E. *moste*, pt. of *motan* "*have to, be able to*," from P.Gmc. **motanan* "*to fix, allot, appoint, to have room, to be able*" (cf. O.Fris. *mota*, M.L.G. *moten*, Du. *moeten*, Ger. *müssen* "*to be obliged to*," Goth. *gamotan* "*to have room to, to be able to*"), from PIE base **med-* "*to measure*." Used as present tense from c.1300, from the custom of using past subjunctive as a moderate or polite form of the present (Etymology Dictionary). In Old English *must* (← *mótan*, ic, hé *mót*, þú *móst*; wé *móton*; p. *móste* ← *mót-te*) has the following components in its lexical meaning *to be allowed, may, mote, are not able and are not permitted, to be supplied from preceding clause, to be inferred otherwise, to be obliged, to be obliged, must,*

e.g.: *Man mót on eornost mórtian wið his drihten*, *Ælfc. T. Grn. 15, 3.* (Bosworth and Toller Anglo-Saxon Dictionary)

Almost two decades ago, Bolinger (1980) argued that "the system of modal auxiliaries in English was undergoing a wholesale reorganization" Subsequent research, however, has focused either on general properties and typological aspects of auxiliaries (Palmer 1986; Heine 1993; Bybee et al. 1994) or on the central modals of English. Work on the English central modals in turn falls into two groups: studies of their present-day English semantics (e.g. Coates 1983; Palmer 1989; Sweetser 1990) and studies of their history (Lightfoot 1979, 1991, Plank 1984, Kyto 1991, Warner 1993, Denison 1993). Due to the focus on the central modals, Givon's more recent statement is still fairly general and thus reminiscent of Bolinger's observation (1980).

The history of the tense-aspect-modal system of English is far from over. New operators are still being introduced into the system; and both those and the system as a whole are in the process of being re-shaped. As similar statements by other researchers indicate (e.g.: Bybee et al. 1989, Croft 1990) that change is under way in the English auxiliary domain. But despite occasional attempts to handle both central modals and semantically related constructions (Perkins 1983, Matthews 1991, Mindt 1995, Westney 1995), the 'wholesale reorganization' has not yet been adequately documented. E. Traugott (1997) could still only state: the modal auxiliaries, and auxiliary *do* have held center in recent accounts of the history of English syntax ... and semantics... However, the so-called quasi-modals (e.g. *be to, be going to, have to, ought to, had better, be about/able/bound to*), which are in an intermediate position between raising predicates and modal operators, have largely been relegated to the sidelines. As a class the quasi-modals have still not received the attention that they deserve.

Recently some new terms were introduced based on the typological principles. Tradition apart, there is some justification inherent in the term *deontic* that warrants the inclusion of volitional modality. More recently, Joan Bybee and her coauthors [Bybee 1985, 1994, 1995] distinguish between the following types of modality:

- a) *agent-oriented* (desire, obligation, ability, root possibility, permission), when conditions influence the agent of the sentence to do something.
- b) *epistemic* (possibility, probability)
- c) *speaker-oriented* (imperative, hortative, optative)

This categorization is further refined and slightly revised in J. Bybee et al. [Bybee, Perkins, Pagliuca 1994, App. B]. Their classification is not fundamentally different from traditional approaches. It should be noted that the concept of agent-oriented modality overlaps to a great extent with the concept of deontic modality. In addition to "*permission*" and "*obligation*", which are traditionally associated with deontic modality, they include 'desire', which is still a mainstream approach. Deontic modality means that the speaker intervenes in the speech event by laying *obligations* or giving *permission*. On the other hand, epistemic modality implies that the speaker assesses the probability that the proposition is true in terms of the modal *certainty*, *probability*, or *possibility*. Two further important notions that J. Bybee et al.'s (1994) most recent definition of agent-oriented modality also encompasses are 'ability' and 'intention'. Significantly, they do not dismiss deontic modality as a useless concept.

They exclude it from their taxonomy because it cuts across the modality domain in a way that is not cross-linguistically valid.

The inclusion of 'intention' under agent-oriented modality by J. Bybee et al. puts forward some more questions. Due to overlapping of such categories [Quirk, Greenbaum, Leech, Svartvik 2000, c. 7], 'volition', 'intention', 'prediction' and futural readings shade into one another synchronically. Significantly for the present purposes, they also develop out of one another diachronically (see: on semantic changes in the history of the English modals since Old English; relevant crosslinguistic work reported in many publications).

In English such notions as obligation and necessity can be expressed by one and the same modal, for example, *must* can be both obligative and necessitive in nature. Naturally the context disambiguates between two meanings, though sometimes it fails to clearly differentiate them. In English such notions can be grammaticalized as modal verbs:

1. Patrick *must* take his child to the day care centre.

In this case *must* reveals the component [*obligation*] because under the law a child is not allowed to stay alone, though it can express [*necessity*] when his mum wants to spend some time shopping at the midtown plaza

2. Benny *must* be at school

The child is of school age and according to the law he is at school so the component *necessity* is expressed. According to the family tradition a child has his lunch at two o'clock but he is still out then the component of [*probability*] is revealed

3. Tony *may* be at the museum.

The [*possibility*] is expressed under the condition when mom is not sure what tour her son has chosen after classes.

4. Bart *may* go to go to the ball park.

Bart is allowed to go [*permission*] but there is a [*possibility*] for him to go there.

5. Sam *can* play the piccolo.

Sam studied that musical instrument and now he is able to play it [*ability*] but he can be allowed to play that instrument [*permission*].

6. Jake *must* show the way to the guest

Only Jake *must* show [*necessity*], and Jake will show the way to the guests [*volition*]

J. Coats [Coats 1983] considers it to be the case of indeterminacy; ambiguity involves two distinct meanings, e.g. occasional epistemic/deontic overlap with *must*. The definitional analysis can help to reveal possible components in the lexical

Therefore the article puts forward a new way of defining the meaning of *must* [Bybee 1994] in Modern English. The semantic component of *must* is revealed functioning in the distributional formulae. In 56 cases out of 100 the noun is used in the preposition to *must*, nouns can be proper (2 cases), common nouns denoting human-beings

NOUN + MUST

NPprop (human being) + MUST + V - necessity (logical) [Quirk, Greenbaum, Leech, Svartvik 2000, c. 224-225].

1. **Emma must buy** all the books she wants to read, she will demand more

novels at each price, and her demand curve will shift to the right [Mankiw 2003, c. 41].

2. In our case, **Jack and Jill must agree** how to split between themselves the monopoly production of 60 gallons [Mankiw 2003, c. 42].

NPcom (human being) + MUST + V – obligation (compulsion) [Quirk, Greenbaum, Leech, Svartvik 2000, c. 225].

1. The value of everything a **seller must give up** to produce a good [Mankiw 2003, c. 148].

2. To answer this question, **the planner must first decide** how to measure the economic well-being of a society [Mankiw 2003, c. 152].

NPcom (non-living being)+ MUST + V - necessity

1. To induce firms to incur this extra expense, **the price must rise** substantially, so supply becomes less elastic [Mankiw 2003, c. 107].

2. We determine that both **curves must shift** [Mankiw 2003, c. 85].

NPcom (collective)+ MUST + V - obligation

1. The **government must then determine** what kinds of public goods to provide and in what quantities [Mankiw 2003, c. 231].

2. To increase the amount sold, a **monopoly firm must lower** the price of its good [Mankiw 2003, c. 322].

PRONOUN + MUST

WE + MUST + V - necessity

1. Yet to understand fully how taxes affect economic well-being, **we must compare** the reduced welfare of buyers and sellers to the amount of revenue the government raises [Mankiw 2003, c. 162].

2. To apply this basic analysis to understand the impact of the agronomists' discovery, **we must first develop** one more tool: the concept of elasticity [Mankiw 2003, c. 94].

You + must + V - obligation

1. If you want to know how any event or policy will affect the economy, **you must think** first about how it will affect supply and demand [Mankiw 2003, c. 65].

SHE/HE+ MUST + V - obligation

1. **He must present** in the light of the past for the purposes of the future [Mankiw 2003, c. 34].

2. But now turn this logic around: When Helen is producing a large quantity of cookies, **she must have hired many workers** [Mankiw 2003, c. 275].

IT + MUST + V – requirement (logical necessity)

1. The more indebted the government, the larger the amount **it must spend** in interest payments [Mankiw 2003, c. 247].

2. By contrast, when a monopoly increases production by 1 unit, **it must reduce** the price it charges for every unit it sells, and this cut in price reduces revenue on the units it was already selling [Mankiw 2003, c. 322].

They + MUST + V - compulsion

1. A better way to value human life is to look at the risks that people are voluntarily willing to take and how much **they must be paid** for taking them [Mankiw 2003, c. 232].

2. Rather than the convivial photoop they'd planned, however, **they must contend** with worrisome trade news [Mankiw 2003, c. 198].

One + Must + V - requirement

1. But their value must be compared to their opportunity cost—that is, to what **one must give up** to obtain them [Mankiw 2003, c. 220].

2. To evaluate whether a tax code is horizontally equitable, **one must determine** which differences are relevant for a family's ability to pay and which differences are not [Mankiw 2003, c. 257].

Who + MUST + V - obligation

1. Consider a student **who must decide** how to allocate her most valuable resource—her time [Mankiw 2003, c. 4].

THAT + MUST + V - probability

1. Recall that the opportunity cost of an item refers to all those things **that must be forgone** to acquire that item [Mankiw 2003, c. 271].

THIS + MUST + V - probability

1. Although it is not easy to see in your diagrams, the tax reduces Placebo's profit. Explain why **this must be true** [Mankiw 2003, c. 346].

Undoubtedly there is a relative correlation between the meaning component of must and its distribution though some tentative results can be drawn especially in the domain of addressor and addressee's orientation.

A complex investigation of must distribution and correlation of the meaning of must with the distribution model proves the hypothesis that the meanings of must given in the dictionary entry activate the core components. Furthermore the speaker's intention, the distributional model, and the discourse register help to reveal the definite component of the meaning which is common for both interlocutors as a result of collective and individual experience.

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