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Thematic Roles and the Quest for Semantic Invariants of Lexical Derivations

1. Introduction

This paper is related to the project called "Semantic Dictionary Viewed as a Lexical Database", see general information about the project in Kustova & Paducheva 1994, Rozina 1994, Paducheva 1998 (at present we deal with verbs).* Each word in our dictionary is provided with a meaning definition. The final purpose of our study is to see how much linguistically relevant information can be derived from meaning definitions. In fact, semantics allows to make useful predictions about different aspects of linguistic behaviour of a word — such as morphological and syntactic combinability restrictions; differences in the aspectual potential of a verb; referential statuses of arguments; prosody and word order, etc. The language we study is Russian. In this paper I translate examples into English (or use comparable English examples) wherever possible.

The first obstacle you are faced with while providing words with reasonable meaning definitions is ambiguity: meanings multiply in the course of being accurately described. One of the sources of this multiplicity of meanings of one and the same word is that the lexicon is worked upon by a variety of productive processes of semantic derivation. This is why semantic derivation is of primary concern for a dictionary maker.

We shall use the term *lexical derivation*, which makes it possible to ignore the difference between word formation, when derivation is expressed by affixation, and semantic derivation, which consists in that a new meaning or use of an "old" word comes into being.[1] In example (1) Russian *otkrylas'* is a reflexive counterpart of *otkryl* 'open'; so it is word formation; while in (2) there is one and the same word with two different meanings (or uses). Both pairs of sentences exemplify lexical derivation, and the semantic relationship between the initial and the (semantically) derived lexical item in (1) and (2) is the same:

Folia linguistica, 1998, v. XXXII/3-4, 349-363

(1) a. Ivan *otkryl* dver'
John-NOM.SG open-PAST door-ACC
'John *opened* the door';

b. Dver' *otkrylas'*
door-NOM open-PAST.REFL
'The door *opened*[1].

(2) a. John *opened* the door;
b. The door *opened.*

In this paper I shall concentrate on productive semantic derivation processes in verbs — in particular, on those connected with metonymic shifts[2] and, as such, reflected in the deep-case frame of a verb.

The deep-case frame is a set of deep cases. For the notion of deep case, tribute should be paid to Fillmore (1968a, 1977). Several essential specifications are due to Dik (1978). Chomsky introduced deep cases into generative grammar — with the terminological replacement of deep cases by theta-roles (the term being taken from Gruber 1965). In Moscow school semantics, semantic valencies and semantic roles (which are close relatives of both theta-roles and deep cases, see Apresjan 1974) are extensively used since the late 60ies. I shall use the latter term (semantic role), which has gained wider acceptance.

My main claim is that semantic roles make it possible to reveal the semantic invariant of a major part of productive derivations. It should be borne in mind that semantic roles and deep cases, though closely related notions, do not coincide, and I shall use this discrepancy in order to explicate important differences between derivationally connected lexemes.

The dictionary deals with lexemes: a lexeme is a word taken in one of its meanings. Each lexeme has a lexical entry corresponding to it in the dictionary.

2. Roles and Deep Cases

Semantic roles characterise participants of the situation on the denotative level — from the point of view of what happens to this or that entity in the course of the event described by the verb. The deep case of an argument cannot be identified with the semantic role of the participant. Indeed, a deep case combines the information of at least three different kinds, and the semantic role is only one of them. The remaining two are the communicative rank of an argument and taxonomic (i.e. ontological) class.

The communicative rank of an argument is its salience, or prominence, for the speaker. The term perspective (Fillmore 1977) can also be used, which can be traced back to Roman Jakobson's distinction of central and peripheral cases introduced in 1936: the Subject and the (Direct) Object are arguments inside the perspective, while all the others belong to the Periphery of the speaking subject's field of vision and/or sphere of interests.

Thus, the main division is made between the Centre and the Periphery. But there is the third possibility: the participant of the situation may be syntactically non-expressible in the context of a given verb, thus being beyond the most distant borders of the Periphery (and having the Zero rank). This is the case, e.g., with the argument Experiencer (= Observer) of the Russian verb *pokazat'sja* 'to appear' (example from Apresjan 1986). Take, e.g. a sentence

(3) A rider appeared on the road.

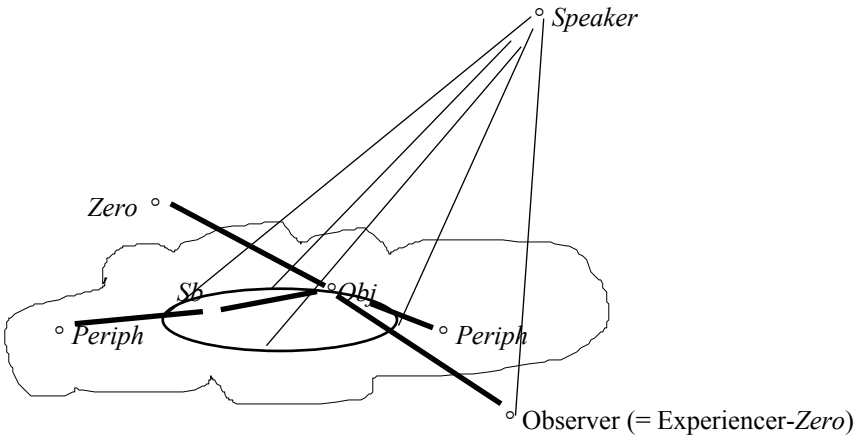
The situation described by this sentence presupposes the subject of perception: the rider obviously has appeared in the field of vision of a certain subject, presumably, the speaker — and this is why you cannot reasonably say

(4) *I appeared on the road.

Still, normally the subject of perception presupposed by such sentences as (a) cannot be referred to with the help of a noun phrase dependent on the verb, and in this sense it is non-expressible. The English verb *to lurk,* examined in Fillmore 1968b, has much the same properties.

Thus, we can characterise the participant of the situation with respect to its communicative rank, and this parameter has three values: Centre, Periphery, Zero.

The opposition of the Subject and the Object (both belonging to the Centre) to all the peripheral participants has a direct semantic — or call it pragmatic — significance. The focus of the speaker's attention may shift from one participant to another, and this fact has direct syntactic consequences. This can be seen on the diagram below. The dotted line corresponds to highly probable, though not necessary, co-reference between the Speaker and the Observer. Semantic roles of the participants are not specified (the only exception is the Observer).



The lexicon codifies the communicative weight of the participants as well as their semantic roles. Indeed, verbs may differ from one another by the communicative weight of their arguments, the semantic roles of arguments

being the same. The pragmatic correlates of the Centre/Periphery distinction were demonstrated in Wierzbicka (1980b:70).[3]

Below several examples are given (among them those from Apresjan 1974, Fillmore 1977, Gruber 1995) of verbs differing semantically only (or almost only) in the communicative ranks of their arguments:

(5) a. The train *went away from* the station,
b. The train *left* the station.

(6) a. Bears *live in* this cave,
b. Bears *inhabit* this cave.

(7) a. Water *is running into* the pool,
b. Water *is filling* the pool.

(8) a. The arrow *got to* the target,
b. The arrow *reached* the target.

(9) a. The air *goes out* o/the balloon,
b. The balloon *leaks',*

(10) a. An important document *is in* this package,
b. This package *contains* an important document.

(11) a *There are* many foreigners *in* the town,
b. The town *swarms with* foreigners.

(12) a. Fruit *falls* from the tree,
b. The tree *drops* fruit.

(13) a. Mne *nravitsja* eta kniga
me-DAT please-3.SG.PRES this-NOM book-NOM
'I like this book';

b. Ja *ljublju* etu knigu
me-NOM love-l.SG.PRES this-ACC book-ACC
'I love this book'.

(14) a. I *gathered* food for the animals,
b. I *provided* the animals with food.

In example (5) the semantic role of *the station* in (a) and (b) is the same; but in (b) the station is promoted to the Centre — from the peripheral position it occupied in (a): becoming, syntactically, the Object, Source moves from the Periphery to the Centre. Thus, by choosing the verb *leave,* instead of *go away,* the speaker ascribes *the station* in sentence (b) some kind of salience it was deprived of in (a).

In (11) both participants change their communicative rank: in (b) Place is promoted to the Centre, while Theme goes down to the Periphery.

It is clear from these examples that the deep case is only partly determined by the role of the participant in the situation (by its "compositional role" in the terminology of Gruber 1995): another constituent of the deep case is the

participant's communicative rank. Communicative information should be used as an input of the linking rules mapping deep cases on their surface counterparts. The efforts directed to the idea of predicting this information on purely semantic grounds seem to be spent in vain: there are some predispositions and prohibitions in role-rank combinations, but no predictability. In fact, Place can be both a Peripheral and a Subject, see example (11); Source can be both Peripheral and Object, see example (5), etc.

3. Taxonomy

From the taxonomic point of view, an argument of a verb can be characterised as Person, Material Object, Animate being, Natural force, Event, State, Image, etc.

Purification of the semantic role from the taxonomic information contained in the notion of deep case also gives many advantages. For example, the opposition "animate/inanimate" is not to be contaminated with role distinctions. In Fillmore 1977 it was suggested to assign one and the same deep case to the subjects of sentences *The man died* and *The snow melted* which were assigned different deep cases in Fillmore 1968a. But if the difference in taxonomy is distinctly specified, role distinctions are here superfluous: both *the man* and *the snow* are Patients.

Taxonomy is what can differentiate meanings of words of different languages. Let us take an example (cast over by Kamp & Rossdeutscher 1994). In Russian you can only apply the verb *vyzdowvel* 'to become healthy' to a whole organism, not to its parts:

(15) a. Bol'noj *vyzdorovel*
"The patient healed.'

b. *Ranenaja noga *vyzdorovela*
'The wounded leg *healed.'*

(you should say about a leg *Ranenaja noga zazhila),* while the English *heal* (or French *guerir)* lacks this constraint.

An hypothesis that remains to be proved is that taxonomy is not what generates different meanings by itself. In Dik 1978 it is suggested that the Object of *hit,* be it an animate being or a material object, is always Patient. This is meant to imply that the opposition Animate being / Material object is one of taxonomy, not of semantic role. Still there is a suspicion that in the case of *hit,* the "animate/inanimate" distinction has an effect upon the role played by the Object of the verb (at least, this is the case for the Russian *udarit'* 'hit': in *udarit' rebenka* 'hit the child' the object experiences pain; in *udarit' po stolu* 'hit the table' the Object utters a sound).

In the following section I am going to discuss the highly controversial notion of semantic role. My claim is that roles must be semantically substantiated.

4. Semantic Substantiation of Roles

Roles that we make use of have a semantic substantiation. In fact, each role is a more or less direct consequence of the meaning definition of a lexeme: in a prototypical case the role is substantiated by a component which is present as such in the meaning definition of the verb; verbs with the same role must have the same component (or components) in their meaning definition. Now at this point a few words are at place about the general idea of a meaning definition. In compiling our dictionary we follow general principles of the Moscow school semantics (see, e.g., Apresjan 1974) and even more so of Wierzbicka's influential semantic writings (Wierzbicka 1980a, 1988). Here are the main points.

1) A meaning definition should be stated in a natural language; preferably, only the core words of the language are used — semantic primitives or words amenable to primitives.

2) A meaning definition consists of several independent components, all of them sentences; the components differ in their assertive force — they are marked as assertions, presuppositions, implications, modifications, etc.

What is specific to our meaning definitions is that they have a certain format specific for a given taxonomic, i.e. ontological, category of verbs (the idea of format is contained, in a preliminary form, in Wierzbicka 1980a).

Different formats are provided for actions, processes, states, happenings, etc. To give an idea of what a format of a definition is like, here is the scheme of definition for one class of verbs, namely, physical actions.

The definition of a physical action necessarily contains the following semantic components:

X was doing something: with a Purpose;
this activity caused
the Result coinciding with the Purpose:
a new state of the Patient.

Indeed, if you open the window there must be a purposeful activity of the Agent that causes the change of state of the window.

Returning now to substantiations of semantic roles, three types of roles can be distinguished — specific roles, hyperroles and default roles.

Specific roles, such as Agent, Cause, Place, Source, Goal, Instrument, Material/Means, Addressee, are semantically defined by a component (or a bundle of components) in the meaning definition of the verb. Examples:

X is Agent (in the situation described by the verb V) if the definition of V contains a component 'X was acting with a Purpose'.

Z is Instrument if Z acts upon the Patient and there is an Agent that has put Z into action with a Purpose in mind.

The substantiation of the role Material contains, in addition to those components that substantiate Instrument, a component 'Z was s in the course of

action or became bound (see Apresjan 1974:128); for example, if somebody filled the pool with water by means of a hose then water (Material) is left in the pool, i.e. spent; while the hose — Instrument — can be taken away and used again.

Locatives (Source, Goal, etc.) all have semantic components corresponding to each of them.

Cause is an event or state X substantiated by the component 'X caused something' or 'X acts upon something'.

The roles of the Addressee, Beneficient, Experiencer are all of them semantically identifiable.

Patient is an example of a hyperrole: the only property common to all the participants with the role Patient is that they undergo a change. Specific semantic components of different verbs implying the role of Patient may be different. It may be a change of state *(X calmed);* but it can also be a change of place *(brought X),* so the component will be formulated as movement; it can be a change of the value of some parameter *(X grew up);* an object may come in and out of existence *(X melted; ate X);* in and out of sight *(X appeared; X disappeared),* etc.

Theme is an example of a default role: it is assigned to a subject of state *(She worries);* or to a property bearer *(The newly born weighed 4 kg; John limps);* and also to a participant that cannot be assigned a more definite role.

Different roles of one and the same verb are mutually correlated: on the one hand, roles can be incompatible, as are Cause and Instrument (in fact, only an event or state can be a Cause); on the other hand, roles can presuppose one another. For example, Instrument presupposes Agent (see Fillmore 1977). The same is true for Material: in example (16) the role of *leaves* is Substance, not Material, because *the wind* is not Agent but Natural force, see Paducheva & Rozina 1993:

(16) The wind covered the lawn with leaves.

Free combination of roles with communicative ranks generates, among others, the notion of peripheral (i.e. background) Agent: an Agent which is deprived of its usual communicative rank of the sentential Subject is peripheral. Counteragent (one of the deep cases used by Fillmore) is, in our terms, a peripheral Agent:

(17) I got a letter *from John (= 'John* wrote it').

(18) I know it *from John (= 'John* told it to me').

(19) Ona rodila rebenka *ot kakogo-to inostranca.*
'She gave birth to a child *by a foreigner'.*

All roles we use have a semantic substantiation. Moreover, I claim that nothing else but a semantic substantiation of the type proposed is needed for the definition of syntactic roles.

5. Diathetic Shift: A Productive Mechanism of Lexical Derivation

The next notion I need is diathesis. I suggest a modification for the definition of diathesis proposed in Mel'chuk & Kholodovich (1970): diathesis is understood, in our system, as the set of semantic roles assigned to the arguments of a lexeme, with a communicative rank assigned to each of them. For example, the diathesis of *smeared* in (23a), section 6, is <Agent-*Sb*, Material-*Ob*, Goal-*Periph* >; while in (23b) it is <Agent-*Sb*, Goal-*0b*>, Material-*Periph*>.

Another notion we need is role splitting. In Apresjan (1974:154) valency splitting is defined as "representing one valency by means of two syntactically independent noun phrases". We use the term "role splitting" to denote such a correspondence between diatheses of two derivationally related lexemes when one argument of the primary lexeme L corresponds to two different arguments of the derived lexeme L'. Examples from Apresjan (1974:155) can be translated into English; the role Locative-*Ob* in (20a) is split in (20b) into two roles, Possessor-*Ob* and Part-*Periph;* the role Contents-*Sb* in (21a) is split-in (21b) into Target-*Sb* and Aspect-*Periph*:[4]

(20) a. I stroke *her hand.*
b. I stroke *her on the hand.*

(21) a. *His permanent complaints annoy me.*
b. *He* annoyed me *with permanent complaints.*

The fact of role splitting is proved by a transformation that replaces the structure with one NP by a structure with two NPs. Presumably, the first structure is the primary one, while the second is derived from the first. If the direction of derivation is not clear the role splitting is not motivated either. For example, in (22) one argument *pieces of bread* in (22b) is referentially identical to two in (22a), which fact, it might seem, testifies to the role splitting in (22a). But *cut* in its primary meaning is a verb of deformation, so its primary object should be Patient, as in (22a), and not Result, as in (22b). So it isn't clear whether (22a) exemplifies role-splitting or not:

(22) a. He cuts bread into pieces.
b. He cuts thick pieces of bread.

In what follows I try to demonstrate two points:

1) semantic roles make it possible to trace the semantic invariant of those lexical derivations that imply a diathetic change (if the roles remain the same, then some semantic components of the initial and the derived lexeme must be the same).

2) separation of the semantic role of the argument from its communicative rank (i.e. a direct access to communicative ranks of participants) makes it possible to account for a pragmatic change accompanying diathetic shifts.

A series of commented examples is given in the next section.

6. Semantic Derivation: Metonymy

In examples (23)-(25) (from Apresjan 1974, Fillmore 1977, Kamp & Rossdeutscher 1994) arguments change their communicative rank, the semantic roles of the arguments being preserved. For example, *bread* in (23b) enters the perspective while in (23a) it belongs to the periphery:

(23) a. I smeared *the jam* on the bread,
b. I smeared *the bread* with jam.

(24) a. I cleared *the paper* off the table,
b. I cleared *the table* of paper.

(25) a. The doctor cured *malaria.*
b. The doctor cured *the patient* of malaria.

The compositional part of the meaning definition for *smear* in (a) and (b) is the same. The two *smear* lexemes differ only in the communicative ranks of the arguments. Thus, (23)-(25) exemplify a diathetic shift. The notion 'wholly affected Object' is used to describe meaning differences in examples like (23)-(25) in Apresjan (1974), Fillmore (1977); cf. Rozina (1994).

Example (7) can also be treated as a diathetic shift; the semantic role of the Subject in (7b) is Instrument:

(26) a. I opened the door *with my key.*
b. *My key* opened the door smoothly.

Note that Instrument presupposes Agent, and Agent is, at first sight, impossible in the context of (26b), see Dik (1978:39). But Agent in (26b) is only excluded on the syntactic level: it is still present in the implied set of semantic roles of the verb *open* (e.g., *smoothly* = 'without any difficulty for Agent'), but in the context of Instrument-Sb it becomes inexpressible — in much the same way as the Experiencer was in the context of the verb *appear* in example (3) of Section 2.

Example (27) concerns one of the most productive types of derivations in Russian and English, namely, decausativation (in Russian it manifests itself as reflexivisation of the verb — reflexive morpheme *-sja/s'* is added):

(27) a. Prikhod Johna *uspokoill* *ee*
arrival-NOM John-GEN calm-PAST she-ACC
'John's arrival *calmed* her.'

b. S prikhodom Johna ona *uspokoilas'*
with arrival-INSTR John-GEN she calm-REFL.PAST
'With John's arrival she *calmed.*

The semantic invariant of (27a) and (27b), as well as the difference between them, is revealed by the following explications:

(27) a. *X uspokoil Y* = event X occurred / X made smth.
this caused
state began: Y is calm

b. Y *uspokoilsja* = state began: Y is calm
(because event X occurred / X made smth.)

Both verbs have two main semantic components: causative and "patiental" (change of state). Decausativation consists in that these two components change their communicative ranks: the causative component goes to the background (and the corresponding role Cause moves to the periphery), while the patiental component comes to the foreground (and the Patient indulges the role of Subject). Besides, the role Cause becomes optional.

Example (28) demonstrates causativation (in Russian *rastopit'* is causative of *rastajat';* thus, it is word formation):

(28) a. Sneg *rastajal*
snow-NOM melt-PAST
'The snow melted.'

b. Solnce *rastopilo* sneg
sun-NOM melt-PAST snow-ACC
'The sun *melted* the snow' .

Explications:

(28) a. *Y rastajal* = state began: Y is liquid
(because event X occurred)

b. *X rastopil Y*= event X occurred
this caused
state began: Y is liquid.

Causativation of a medial verb is commonly treated as an application of the causation operator to it. But this is not a precise characterisation. As we saw in (27), decausativation, which yields a prototypical medial verb, can be presented as a transition from a foregrounded causation to a peripheral, backgrounded one. In (28) we cannot say that *melt* transitive = CAUSE *(melt* intransitive): strictly speaking, causation only applies to the patiental component of a medial verb, not to its full meaning. It can be formulated in a more precise way as follows: causativation of a medial verb consists in the application of a causative operator to the patiental component of a medial verb, while the background causative component of the medial verb is cancelled in the context of the foregrounded causation.[5] Thus defined, causativation and decausativation become mutually reverse semantic operations under which causative and patiental components change their communicative ranks.

Thus, semantic relationships in (27) and (28) are described by diathetical shifts — (27') for (27) and (28') for (28):

(27') <Cause-*Sb*, Patient-*Ob*> => <Patient-*Sb*, Cause-*Periph* >

(28') <Patient-*Sb*, Cause-*Periph* > => <Cause-*Sb*, Patient-*Ob*>.

Semantic roles of verbs undergoing causativation and decausativation remain the same. In fact, the meaning definitions for a medial verb and its causative (or for a causative and its decausative) consist of the same components; they only change their assertive force. Hence the explication of semantic invariant underlying both pairs.

Both causativation and decausativation are treated as yielding semantically equipolent relationships. As a consequence, both in (27) and in (28) the direction of the semantic derivation coincides with the morphological one (the opposite point of view is discussed at length in Mel'chuk (1967)): formally derivative *uspokoit'sja* is treated as semantically derivative from *uspokoit';* and the same with *rastopit',* which is treated as semantically derivative from *rastajat'.*

Note that 'communicatively peripheral' does not necessarily mean 'semantically optional'. In example (27b) the peripheral role does become semantically optional: if no Cause is mentioned the change is understood as having taken place "by itself (natural forces, even if they do take part in a process, usually aren't taken into consideration by language), as in (29):

(29) Dom razrushilsja
house-NOM destroy-PAST.REFL
'The house got destroyed.'

But this is not necessarily the case: the Agent subjected to passivisation becomes a peripheral participant of the situation but remains obligatory.

Verbs of action have no background Cause. Instead, they have an obligatory motivational component: the action is being done because of the intention of the Agent. And when the causative operator applies to an action verb the result is ambiguous: either what is caused is the action as a whole or only its patiental component.

(30) Ja *nakormil* Vanju.
'I fed Vanja.'

Sentence (30) is ambiguous: either the action as a whole constitutes the scope of causation (i.e. I arranged it so that Vanja ate), or its patiental state only (i.e. I myself did the feeding — Vanja being, e.g., a child). In the same way, sentence (31) may either mean 'caused to lie' (e.g., when Ivan is invalidated or drunk) or, in an ordinary case, when he lay down on his own will.

(31) Ja *polozhil* Ivana v gostinoj.
a. I *laid* John in the dining room,
b. I *put* John *up* in the dining room.

States also have no background Cause: a state, as opposed to a change, presupposes no reason (linguistically). Thus, a background Cause is not so trivial a component as it seems to be.

For the sake of comparison, look at example (32) where semantic derivation cannot be presented as a diathetic shift; in fact, the participants of (b) preserve neither the semantic roles nor the taxonomic characteristics of those in (a):

(32) a. John zalil kartoshku *vodoj*
John-NOM pour-PAST potatoes-ACC with water-INSTR
'John poured *water* over potatoes.'

b. *Voda* zalila luga
water-NOM pour-PAST meadows-ACC
'The water poured the meadows.'

The noun phrases *vodoj* in (a) and *voda* in (b) have different semantic roles: in (a) *zalit'* is an action verb, and *water* is Material used by Agent according to his/her purpose; while in (b) *water* is a (natural) Natural force: it resembles Agent in that it disposes of energy, but it differs from Agent because it cannot use instruments and materials to reach its goals.

The diathesis of (32a) is <Agent-*Sb*, Patient/*Place*-*Ob*, Material-*Periph*», while for (32b) it is <Natural force-S*b*, Patient/Place-*Ob*>.The two meanings of *zalit'* in (32) are related by a metaphorical shift,[6] and not by metonymy: Agent moves nowhere, it is replaced by Natural force.

7. Psychological Verbs and Their Linking Problem

A few words about so called psychological verbs (such as *frighten, anger, amaze, annoy* etc.) notorious for the complexity of their linking problem. In example (33) we have derivation; in fact, *udivit'sja* is derived from *udivit'* (in the same way as *ispugat'sja, obradovat'sja, ogorchit'sja* are derived from *ispugat'* 'frighten', *obradovat'* 'amuse', *ogorchit'* 'grieve'):

(33) a. Menja udivil ego prixod
me-ACC astonish-PAST his arrival-NOM
'His arrival astonished me.'

b. Ja *udivilsja* ego prixodu
I-NOM astonish-PAST.REFL his arrival-DAT
'I was astonished by his arrival.'

At first sight the roles of participants in (33a) and (33b) are the same — Experiencer and Contents. But then where does the syntactic difference come from; namely, why the Experiencer surfaces as a Subject in (33b) and as an Object in (33a)? This question is asked in Pesetsky (1995:55), whose answer is: the roles of participants in (33a) and (33b) are different.

In fact, the roles Experiencer and Contents, ascribed to the arguments of the verb *udivilsja* in sentence (33b), suit it well. Meanwhile, sentence (33a) has a

standard case frame of a causative verb, and it must have the corresponding diathesis — <Causer-*Sb*, Patient-*Ob*>. Sentence (33a) asserts nothing but a causal relation between the event and the Patient's transition into a new state. As for (33b), it is about the emotional state of the Experiencer, which includes getting information, its evaluation, emotional reaction etc. And hence its case frame (a thorough scheme for explication of emotions is suggested in Wierzbicka 1988). Thus, the idea of semantic substantiation of roles proves its validity.

The relationship between (33a) and (33b) is not the same as that between (27a) and (27b) from section 6: (33a) cannot be presented as the result of decausativation of (33b). In fact, in (33b) the second argument is not semantically optional (cf. (27b), where it is) — it is an obligatory argument both on the surface and semantically: informational and emotional state of the Experiencer, as well as his/her evaluations of events, cannot be formulated without this argument.

The last example I want to talk about in connection with the problem of role preserving lexical derivations is (35) from Pesetsky (1995:60), here numbered as (35). But first let us look at (34). The correspondence between the semantic roles and the surface arguments in (34) can be presented as role-splitting.

(34) a. Menja *rasserdila* statja Johna
me-ACC angered-PAST article-NOM John-GEN
v "New York Times"
in "New York Times"

'John's article in the "New York Times" angered me.'

b. Ja *rasserdilsja* na Johna za statju
me-NOM angered-PAST.REFL at John for article
v "New York Times"
in "New York Times"

'I got angry with John for his article in "New York Times".'

The role of Causer from (34a) is split in (34b) into two, which we call Target (after Pesetsky 1995:60) and Aspect (after Apresjan 1974). The derivation that produces *rasserdilsja* in (34b) from *rasserdil* (34a) does not preserve roles. Thus, the diathesis of *rasserdit'* in (34a) is <Causer- *Sb*, Patient-*Ob*>; of *rasserdit'sja* in (34b) — <Experiencer- *Sb*, Target-*Ob*, Contents-*Periph*>.

An issue dealt with in this connection in Pesetsky (1995:60) is: if Causer, Target and Aspect are different roles, they must be compatible with one another in the context of one and the same verb. Meanwhile, sentence (35), where Causer and Target co-occur, is ungrammatical.

(35) *The article in "New York Times" *angered* Bill at the government.

I suggest an explanation of ungrammaticality in (35) that seems simpler than that proposed in Pesetsky (1995). Namely, the role of the Subject in (35) is not

Causer, it is Aspect. Therefore, (35) can only be the result of splitting the role Causer (of some causative structure like (34a)). Meanwhile, of the two roles resulting from Causer splitting (Target and Aspect) Target has a privilege of entering the perspective. In fact. Target and Aspect are linked semantically as the subject and the predicate, hence, communicatively — as Topic and Comment (cf. Apresjan 1974:154), Therefore under splitting, it is natural for Target to be a foregrounded argument, while Aspect tends to be a backgrounded, peripheral one. Indeed, sentence (36) with Target-*Sb* is perfectly grammatical.

(36) John *angered* me with his article in "Times".

8. Conclusion

Now to recapitulate I repeat my main points again.

Deep case is a combination of three different semantic constituents: semantic (compositional) role; communicative rank of the participant; and its taxonomic (ontological) characteristics. Semantic role is best treated as an abridged notation for a semantic component or a bundle of semantic components in the meaning definition of the verb.

Meanings of one word usually form derivational paradigms. Lexemes of one paradigm may have identical sets of semantic roles but with different communicative ranks or taxonomy.

Separation of compositional and communicative information makes it possible, on the one hand, to present in a compact form semantic invariant of those types of derivation that are called diathetical shifts (identical roles testify to the presence of identical components); on the other hand, this separation reveals communicative changes that accompany diathetical shifts, which were, as a matter of fact, ignored in the early transformational approaches to grammar and lexicon.

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Notes

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1 The term *semantic derivation* is due to Shmelev (1973). In Shmelev (1973:191), Apresjan (1974:187) the attention is paid to the contiguity between word formation and polysemy — both are treated as lexical derivation.

2 The term metonymy is used in a situation where an object is named not by its own name but by the name of an object connected with it by the relation of contiguity. When applied to verbs, metonymy is understood as a shift of a focus of attention from one, presumably central participant of the situation, to another, presumably peripheral.

3 Non-expressible participants should have attracted our attention to the difference between participants of the situation and arguments of a verb: strictly speaking, there is no one-to-

one correspondence between them, though in linguists' ordinary language these terms are used indiscriminately, and it is difficult not to follow this practice.

4 The role Target is understood as in Pesetsky (1995:60); Aspect is after Apresjan (1974:154). Contents is what one thinks or knows.

5 The above formulation can only be accepted on the condition that we refine our rules of meaning composition to include a rule saying that the background causation component of a medial verb is cancelled in the context of the dominating causative operator.

6 Metaphor in poetics can be treated as kind of a category error, so metaphorical shift is, essentially, an unlawful change of category.

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